TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

March 24, 2016

Ms. Emilee Adamson
Piedmont Regional Office
Virginia Department of Environmental Quality
4949-A Cox Road
Richmond, Virginia 23060

Re: Application for Renewal and Modification
VPDES Permit 00088978, Black Swamp WWTF

Dear Ms. Adamson:

As discussed during our meeting with the Department on November 9, 2015, Sussex Service Authority, with support from Sussex County and Timmons Group, is designing upgrades to the Black Swamp WWTF. The purpose of the upgrades is to provide additional treatment and discharge capacity that will support a mega-site development on commercial property owned by Sussex County in proximity to the Black Swamp WWTF. The schematic design phase is underway. We anticipate that the final design will be completed the first to latter part of June 2016. The schedule for implementing the upgrades is pending once funding is secure.

Attached is an application for renewal and modification of VPDES Permit 00088979, Black Swamp Wastewater Treatment Facility (WWTF). The current permit expires on January 31, 2017, therefore the application for renewal is due on or before August 4, 2016. The intent is to apply for the modification at the time of renewal to avoid submitting two applications within a relatively short period of time and to secure firm effluent limits for the increased discharge prior to completing the schematic design phase of the project.

Based on our discussions during the previous meeting, since the Department is unable to model the receiving water's response to the increased discharge, the limits of the modified permit will be based on the Department's "Swamp Limits, "maximum monthly averages for total suspended solids, carbonaceous biochemical oxygen demand, total ammonia, and total Kjeldahl nitrogen of **20, 10, 0.81 and 3.0 mg/L** respectively. This application is for these "swamp limits" to be tiered with respect to phased treatment and disposal capacities of **0.6 / 0.99/ 1.6 MGD** respectively.

1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804 200 6500 FAX 804 560 1016
www.timmons.com

This application includes, complete Forms 1, 2A, Lab Sheets for the Form 2A Part D Expanded Effluent Testing Data, a completed VPDES Sewage Sludge Permit Application Form, and a completed VPDES Permit Application Addendum.

If you should have any questions, please give me a call at 804-200-6392.

Respectfully,

Neal A. Rogers, Jr., P.E.
Senior Project Manager
Timmons Group, Inc.

Attachments
Cc Enc: Frank Irving
David Saunders
Adam Eller - VA DEQ

Application for Renewal and Modification

VPDES Permit VA0088978

Black Swamp Wastewater Treatment Facility

March 24, 2016

Prepared for:

Sussex Service Authority

Prepared by:

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

Timmons Group

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RECEIVED PRO
MAR 30 2016

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1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804 200 6500 FAX 804 560 1016
www.timmons.com
Site Development | Residential | Infrastructure | Technology

This application includes, complete Forms 1, 2A, Lab Sheets for the Form 2A Part D Expanded Effluent Testing Data, a completed VPDES Sewage Sludge Permit Application Form, and a completed VPDES Permit Application Addendum.

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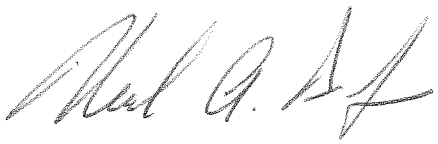

Neal A. Rogers, Jr., P.E.
Senior Project Manager
Timmons Group, Inc.

Attachments
Cc Enc: Frank Irving
David Saunders

Appendix A

Form 1 – General

Please print or type in the unshaded areas only. Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

S		T/A	C
F	VA0088978		D
1	2 13	14	15

LABEL ITEMS	
EPA I.D. NUMBER	PLEASE PLACE LABEL IN THIS SPACE
III. FACILITY NAME	
V. FACILITY MAILING ADDRESS	
VI. FACILITY LOCATION	

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)	X (16)	(17)	X (18)
B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)	(19)	X (20)	(21)
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	(22)	X (23)	(24)
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)	(25)	X (26)	(27)
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)	(28)	X (29)	(30)
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	(31)	X (32)	(33)
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)	(34)	X (35)	(36)
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)	(37)	X (38)	(39)
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)	(40)	X (41)	(42)
J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)	(43)	X (44)	(45)

III. NAME OF FACILITY

C		
1	SKIP	BLACK SWAMP WASTEWATER TREATMENT FACILITY
15	16 – 29	30 69

IV. FACILITY CONTACT

C	A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2	Kearns, Michael P., Engineer	(804) 834-8930
15	16 45	46 48 49 51 52- 55

V. FACILTY MAILING ADDRESS

C	A. STREET OR P.O. BOX
3	4385 BEEF STEAK RD
15	16 45

C	B. CITY OR TOWN	C. STATE	D. ZIP CODE
4	WAVERLY	VA	23890
15	16 40	41 42	47 51

VI. FACILITY LOCATION

C	A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER
5	4385 BEEF STEAK RD
15	16 45

B. COUNTY NAME
SUSSEX
70

C	C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6	WAVERLY	VA	23890	
15	16 40	41 42	47 51	52 -54

CONTINUED FROM THE FRONT

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST	B. SECOND
7 4952 *(specify)* SEWERAGE SYSTEMS	7 *(specify)*
C. THIRD	**D. FOURTH**
(specify)	7 *(specify)*

VIII. OPERATOR INFORMATION

A. NAME

8 SUSSEX SERVICE AUTHORITY

B. Is the name listed in Item VIII-A also the owner? ☑ YES ☐ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box: if "Other," specify.)*

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC *(other than federal or state)*
O = OTHER *(specify)*

M *(specify)*

D. PHONE *(area code & no.)*

A (804) 834-8930

E. STREET OR P.O. BOX

4385 BEEF STEAK RD

F. CITY OR TOWN	G. STATE	H. ZIP CODE	IX. INDIAN LAND
B WAVERLY	VA	23890	Is the facility located on Indian lands? ☐ YES ☑ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	D. PSD *(Air Emissions from Proposed Sources)*
9 N VA0088978	9 P
B. UIC *(Underground Injection of Fluids)*	**E. OTHER** *(specify)*
9 U	9 *(specify)*
C. RCRA *(Hazardous Wastes)*	**E. OTHER** *(specify)*
9 R	9 *(specify)*

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

MUNICIPAL WASTEWATER TREAMTENT FACILITY

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
FRANK H. IRVING, III EXECUTIVE DIRECTOR	Frank H. Irving III	3/29/16

COMMENTS FOR OFFICIAL USE ONLY

C

Appendix B

Form 2A

Basic Application Information

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:

All treatment works must complete questions A.1 through A.8 of this Basic Application Information packet.

A.1. Facility Information.

Facility name: Black Swamp Regional WWTP

Mailing Address: 4385 Beef Steak Rd, Waverly, Virginia 23890

Contact person: Michael P. Kearns

Title: Engineer

Telephone number: (804) 834-6903

Facility Address (not P.O. Box): 4385 Beef Steak Rd, Waverly, Virginia 23890

A.2. Applicant Information. If the applicant is different from the above, provide the following:

Applicant name: Sussex Service Authority

Mailing Address: 4385 Beef Steak Rd
Waverly, Virginia 23890

Contact person: Frank H. Irving III

Title: Executive Director

Telephone number: (834) 839-6930

Is the applicant the owner or operator (or both) of the treatment works?

✔ owner ✔ operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

✔ facility _____ applicant

A.3. Existing Environmental Permits. Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES	VA0088978	PSD	
UIC		Other	
RCRA		Other	

A.4. Collection System Information. Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
Route 460 Corridor	~ 2,900	FM	Public
Routes 620 626 and 625	~400	FM	Public
VADOC Sussex I&II	~ 2,577	FM	Public
Total population served	~ 5,877		

A.5. Indian Country.

a. Is the treatment works located in Indian Country?

_____ Yes ✔ No

b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

_____ Yes ✔ No

A.6. Flow. Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate 0.6, 0.99 ,1.6 mgd Tiered Design Capacity

	Two Years Ago	Last Year	This Year	
b. Annual average daily flow rate	0.272	0.278	0.302	mgd
c. Maximum daily flow rate	0.754	0.498	0.533	mgd

A.7. Collection System. Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

✔ Separate sanitary sewer	100 %
_____ Combined storm and sanitary sewer	_____ %

A.8. Discharges and Other Disposal Methods.

a. Does the treatment works discharge effluent to waters of the U.S.? ✔ Yes _____ No

If yes, list how many of each of the following types of discharge points the treatment works uses:

i. Discharges of treated effluent 1

ii. Discharges of untreated or partially treated effluent _____

iii. Combined sewer overflow points _____

iv. Constructed emergency overflows (prior to the headworks) _____

v. Other _____ _____

b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.? _____ Yes ✔ No

If yes, provide the following for each surface impoundment:

Location: _____

Annual average daily volume discharged to surface impoundment(s) _____ mgd

Is discharge _____ continuous or _____ intermittent?

c. Does the treatment works land-apply treated wastewater? _____ Yes ✔ No

If yes, provide the following for each land application site:

Location: _____

Number of acres: _____

Annual average daily volume applied to site: _____ Mgd

Is land application _____ continuous or _____ intermittent?

d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works? _____ Yes ✔ No

If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

_____

If transport is by a party other than the applicant, provide:

Transporter name: _____

Mailing Address: _____

_____

Contact person: _____

Title: _____

Telephone number: _____

For each treatment works that receives this discharge, provide the following:

Name: _____

Mailing Address: _____

_____

Contact person: _____

Title: _____

Telephone number: _____

If known, provide the NPDES permit number of the treatment works that receives this discharge. _____

Provide the average daily flow rate from the treatment works into the receiving facility. _____ mgd

e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8.a through A.8.d above (e.g., underground percolation, well injection)? _____ Yes ✓ No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

_____

Annual daily volume disposed of by this method: _____

Is disposal through this method _____ continuous or _____ intermittent?

A.11. Description of Treatment.

a. What levels of treatment are provided? Check all that apply.

✔ Primary ✔ Secondary

____ Advanced ____ Other. Describe: ____

b. Indicate the following removal rates (as applicable): 0.60 / 0.99 / 1.6 (Flow Tiers)

Design BOD_5 removal or Design $CBOD_5$ removal	95 / 95 / 95 %
Design SS removal	95 / 95 / 95 %
Design P removal	NA %
Design N removal	NA %
Other ____	____ %

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe.

chlorine gas

If disinfection is by chlorination, is dechlorination used for this outfall? ✔ Yes ____ No

d. Does the treatment plant have post aeration? ✔ Yes ____ No

A.12. Effluent Testing Information. All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	6.9	s.u.			
pH (Maximum)	7.9	s.u.			
Flow Rate	0.754	MGD	0.266	MGD	1552
Temperature (Winter)	17.1	deg-C	12.4	deg-C	361
Temperature (Summer)	28.7	deg-C	25.9	deg-C	368

* For pH please report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
		Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.								
BIOCHEMICAL OXYGEN	BOD-5	11	mg/L	2	mg/L	664	SM 5210B	2
DEMAND (Report one)	CBOD-5							
FECAL COLIFORM		17 MPN/	100mL	6.9 MPN/	100mL	3	SM 9221C+E	1.8
TOTAL SUSPENDED SOLIDS (TSS)		13	mg/L	4	mg/L	51	SM 2540D	1

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

BASIC APPLICATION INFORMATION

PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).

All applicants with a design flow rate ≥ 0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

B.1. Inflow and Infiltration. Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.

0.0 gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

Collection system for Black Swamp is all forcemain. Periodically accepts flows from Spring Branch only to mainitain constant flow through Black Swamp.

B.2. Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

a. The area surrounding the treatment plant, including all unit processes.

b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.

c. Each well where wastewater from the treatment plant is injected underground.

d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.

e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.

f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

B.3. Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g, chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram.

B.4. Operation/Maintenance Performed by Contractor(s).

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? ____Yes ✓ No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: _____

Mailing Address: _____

_____

Telephone Number: _____

Responsibilities of Contractor: _____

B.5. Scheduled Improvements and Schedules of Implementation. Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

001 (Planned Upgrade to Provide Improved Reliability and Additional Capacity)

b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

____Yes ✓ No

c If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

Planned Facility Upgrade 0.6 to 0.99 to 1.6 MGD MMADF (Tiered capacity development)

d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule MM / DD / YYYY	Actual Completion MM / DD / YYYY
– Begin construction	___/___/_____	___/___/_____
– End construction	___/___/_____	___/___/_____
– Begin discharge	___/___/_____	___/___/_____
– Attain operational level	___/___/_____	___/___/_____

(Schedule to be determined pending funding.)

e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained? ____Yes ✓ No

Describe briefly: None required

B.6. EFFLUENT TESTING DATA (GREATER THAN 0.1 MGD ONLY).

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: 001

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.							
AMMONIA (as N)	0.7	mg/L	0.1	mg/L	52	SM 4500NH3D	0.1
CHLORINE (TOTAL RESIDUAL, TRC)	0	mg/L	0	mg/L	1552	4500-Cl G 2000	<1
DISSOLVED OXYGEN	15.2	mg/L	9.7	mg/L	1552	SM 4500-O G-20	<1
TOTAL KJELDAHL NITROGEN (TKN)	5	mg/L	1	mg/L	664	351.2	0.5
NITRATE PLUS NITRITE NITROGEN	12.3	mg/L	11.7	mg/L	2	353.2	0.05
OIL and GREASE	< 5	mg/L	< 5	mg/L	2	1664A	5
PHOSPHORUS (Total)	3.13	mg/L	3.09	mg/L	2	365.1	0.1
TOTAL DISSOLVED SOLIDS (TDS)	422	mg/L	371	mg/L	2	SM 2540C	10
OTHER							

END OF PART B.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:
Black Swamp Regional WWTP VA0088978

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

ART C. CERTIFICATION

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

Indicate which parts of Form 2A you have completed and are submitting:

✓ Basic Application Information packet

Supplemental Application Information packet:

✓ Part D (Expanded Effluent Testing Data)

_____ Part E (Toxicity Testing: Biomonitoring Data)

_____ Part F (Industrial User Discharges and RCRA/CERCLA Wastes)

_____ Part G (Combined Sewer Systems)

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title: Frank H. Irving, III, Executive Director

Signature: Frank H. Irving, III

Telephone number: (804) 834-8930

Date signed: March 29, 2016

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

FACILITY NAME AND PERMIT NUMBER:
Black Swamp Regional WWTP VA0088978

Form Approved 1/14/99
OMB Number 2040-0086

SUPPLEMENTAL APPLICATION INFORMATION

PART D. EXPANDED EFFLUENT TESTING DATA

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

Effluent Testing: 1.0 mgd and Pretreatment Treatment Works. If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.											
ANTIMONY	9	ug/L							1	200.7	5
ARSENIC	< 5	ug/L							1	200.7	5
BERYLLIUM	< 0.5	ug/L							1	200.7	0.5
CADMIUM	< 0.5	ug/L							1	200.7	0.5
CHROMIUM	< 1	ug/L							1	200.7	1
COPPER	6	ug/L							1	200.7	0.2
LEAD	< 5	ug/L							1	200.7	5
MERCURY	< 0.2	ug/L							1	245.1	0.2
NICKEL	< 5	ug/L							1	200.7	5
SELENIUM	< 5	ug/L							1	200.7	5
SILVER	< 1	ug/L							1	200.7	1
THALLIUM	< 5	ug/L							1	200.7	5
ZINC	70	ug/L							1	200.7	5
CYANIDE	< 5	ug/L							1	335.4	5
TOTAL PHENOLIC COMPOUNDS											
HARDNESS (AS $CaCO_3$)	138	mg/L							3	200.7	
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer.											

FACILITY NAME AND PERMIT NUMBER:
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Outfall number: _____ (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
VOLATILE ORGANIC COMPOUNDS.											
ACROLEIN	< 50	ug/L							1	624	50
ACRYLONITRILE	< 50	ug/L							1	624	50
BENZENE	< 5	ug/L							1	624	5
BROMOFORM	< 5	ug/L							1	624	5
CARBON TETRACHLORIDE	< 5	ug/L							1	624	5
CLOROBENZENE	< 5	ug/L							1	624	5
CHLORODIBROMO-METHANE	< 5	ug/L							1	624	5
CHLOROETHANE	< 5	ug/L							1	624	5
2-CHLORO-ETHYLVINYL ETHER	< 10	ug/L							1	624	10
CHLOROFORM	19	ug/L							1	624	5
CHLOROBROMO-METHANE	< 5	ug/L							1	624	5
1,1-DICHLOROETHANE	< 5	ug/L							1	624	5
1,2-DICHLOROETHANE	< 5	ug/L							1	624	5
TRANS-1,2-DICHLORO-ETHYLENE	< 5	ug/L							1	624	5
1,1-DICHLOROETHYLENE	< 5	ug/L							1	624	5
1,2-DICHLOROPROPANE	< 5	ug/L							1	624	5
1,3-DICHLORO-PROPYLENE	< 5	ug/L							1	624	5
ETHYLBENZENE	< 5	ug/L							1	624	5
METHYL BROMIDE	< 5	ug/L							1	624	5
METHYL CHLORIDE	< 5	ug/L							1	624	5
METHYLENE CHLORIDE	< 5	ug/L							1	624	5
1,1,2,2-TETRACHLORO-ETHANE	< 5	ug/L							1	624	5
TETRACHLORO-ETHYLENE	< 5	ug/L							1	624	5
TOLUENE	< 5	ug/L							1	624	5

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POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
1,1,1-TRICHLOROETHANE	< 5	ug/L							1	624	5
1,1,2-TRICHLOROETHANE	< 5	ug/L							1	624	5
TRICHLORETHYLENE	< 5	ug/L							1	624	5
VINYL CHLORIDE	< 5	ug/L							1	624	5
Use this space (or a separate sheet) to provide information on other volatile organic compounds requested by the permit writer.											
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL	< 5	ug/L							1	625	5
2-CHLOROPHENOL	< 5	ug/L							1	625	5
2,4-DICHLOROPHENOL	< 5	ug/L							1	625	5
2,4-DIMETHYLPHENOL	< 5	ug/L							1	625	5
4,6-DINITRO-O-CRESOL	< 5	ug/L							1	625	5
2,4-DINITROPHENOL	< 20	ug/L							1	625	20
2-NITROPHENOL	< 5	ug/L							1	625	5
4-NITROPHENOL	< 5	ug/L							1	625	5
PENTACHLOROPHENOL	< 10	ug/L							1	625	10
PHENOL	< 5	ug/L							1	625	5
2,4,6-TRICHLOROPHENOL	< 5	ug/L							1	625	5
Use this space (or a separate sheet) to provide information on other acid-extractable compounds requested by the permit writer.											
BASE-NEUTRAL COMPOUNDS.											
ACENAPHTHENE	< 5	ug/L							1	625	5
ACENAPHTHYLENE	< 5	ug/L							1	625	5
ANTHRACENE	< 5	ug/L							1	625	5
BENZIDINE	< 5	ug/L							1	625	5
BENZO(A)ANTHRACENE	< 5	ug/L							1	625	5
BENZO(A)PYRENE	< 5	ug/L							1	625	5

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POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
3,4 BENZO-FLUORANTHENE	< 5	ug/L							1	625	5
BENZO(GHI)PERYLENE	< 5	ug/L							1	625	5
BENZO(K)FLUORANTHENE	< 5	ug/L							1	625	5
BIS (2-CHLOROETHOXY) METHANE	< 5	ug/L							1	625	5
BIS (2-CHLOROETHYL)-ETHER	< 5	ug/L							1	625	5
BIS (2-CHLOROISO-PROPYL) ETHER	< 5	ug/L							1	625	5
BIS (2-ETHYLHEXYL) PHTHALATE	< 5	ug/L							1	625	5
4-BROMOPHENYL PHENYL ETHER	< 5	ug/L							1	625	5
BUTYL BENZYL PHTHALATE	< 5	ug/L							1	625	5
2-CHLORONAPHTHALENE	< 5	ug/L							1	625	5
4-CHLORPHENYL PHENYL ETHER	< 5	ug/L							1	625	5
CHRYSENE	< 5	ug/L							1	625	5
DI-N-BUTYL PHTHALATE	< 5	ug/L							1	625	5
DI-N-OCTYL PHTHALATE	< 5	ug/L							1	625	5
DIBENZO(A,H) ANTHRACENE	< 5	ug/L							1	625	5
1,2-DICHLOROBENZENE	< 5	ug/L							1	625	5
1,3-DICHLOROBENZENE	< 5	ug/L							1	625	5
1,4-DICHLOROBENZENE	< 5	ug/L							1	625	5
3,3-DICHLOROBENZIDINE	< 5	ug/L							1	625	5
DIETHYL PHTHALATE	< 5	ug/L							1	625	5
DIMETHYL PHTHALATE	< 5	ug/L							1	625	5
2,4-DINITROTOLUENE	< 5	ug/L							1	625	5
2,6-DINITROTOLUENE	< 5	ug/L							1	625	5
1,2-DIPHENYLHYDRAZINE	< 5	ug/L							1	625	5

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POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
FLUORANTHENE	< 5	ug/L							1	625	5
FLUORENE	< 5	ug/L							1	625	5
HEXACHLOROBENZENE	< 5	ug/L							1	625	5
HEXACHLOROBUTADIENE	< 5	ug/L							1	625	5
HEXACHLOROCYCLO-PENTADIENE	< 5	ug/L							1	625	5
HEXACHLOROETHANE	< 5	ug/L							1	625	5
INDENO(1,2,3-CD)PYRENE	< 5	ug/L							1	625	5
ISOPHORONE	< 5	ug/L							1	625	5
NAPHTHALENE	< 5	ug/L							1	625	5
NITROBENZENE	< 5	ug/L							1	625	5
N-NITROSODI-N-PROPYLAMINE	< 5	ug/L							1	625	5
N-NITROSODI- METHYLAMINE	< 5	ug/L							1	625	5
N-NITROSODI-PHENYLAMINE	< 5	ug/L							1	625	5
PHENANTHRENE	< 5	ug/L							1	625	5
PYRENE	< 5	ug/L							1	625	5
1,2,4-TRICHLOROBENZENE	< 5	ug/L							1	625	5
Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer.											
Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer.											

END OF PART D.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

SUPPLEMENTAL APPLICATION INFORMATION

PART E. TOXICITY TESTING DATA

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

E.1. Required Tests. Current flows are less than 1.0 MGD. Toxicity testing deferred until treatment capacity or flow reach 1.0 MGD.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

____chronic ____acute

E.2. Individual Test Data. Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

Test number:_____ Test number:_____ Test number:_____

a. Test information.			
Test species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			
b. Give toxicity test methods followed.			
Manual title			
Edition number and year of publication			
Page number(s)			
c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.			
24-Hour composite			
Grab			
d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)			
Before disinfection			
After disinfection			
After dechlorination			

	Test number:_____	Test number:_____	Test number:_____
e. Describe the point in the treatment process at which the sample was collected.			
Sample was collected:			
f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both.			
Chronic toxicity			
Acute toxicity			
g. Provide the type of test performed.			
Static			
Static-renewal			
Flow-through			
h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.			
Laboratory water			
Receiving water			
i. Type of dilution water. It salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh water			
Salt water			
j. Give the percentage effluent used for all concentrations in the test series.			
k. Parameters measured during the test. (State whether parameter meets test method specifications)			
pH			
Salinity			
Temperature			
Ammonia			
Dissolved oxygen			
l. Test Results.			
Acute:			
Percent survival in 100% effluent	%	%	%
LC_{50}			
95% C.I.	%	%	%
Control percent survival	%	%	%
Other (describe)			

Chronic:			
NOEC	%	%	%
IC_{25}	%	%	%
Control percent survival	%	%	%
Other (describe)			

m. Quality Control/Quality Assurance.

Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (describe)			

E.3. Toxicity Reduction Evaluation. Is the treatment works involved in a Toxicity Reduction Evaluation?

____Yes____No If yes, describe: _____

_____

_____

E.4. Summary of Submitted Biomonitoring Test Information. If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Date submitted: _____ (MM/DD/YYYY)

Summary of results: (see instructions)

_____

_____

END OF PART E.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

SUPPLEMENTAL APPLICATION INFORMATION

PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete Part F.

GENERAL INFORMATION:

F.1. Pretreatment Program. Does the treatment works have, or is it subject to, an approved pretreatment program?

____Yes ✓ No

F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works.

a. Number of non-categorical SIUs. 0

b. Number of CIUs. _____

SIGNIFICANT INDUSTRIAL USER INFORMATION:

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: _____

Mailing Address: _____

_____

F.4. Industrial Processes. Describe all of the industrial processes that affect or contribute to the SIU's discharge.

_____

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): _____

Raw material(s): _____

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ____Yes ____No

b. Categorical pretreatment standards ____Yes ____No

If subject to categorical pretreatment standards, which category and subcategory?

_____

F.8. Problems at the Treatment Works Attributed to Waste Discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

____Yes____No If yes, describe each episode.

_____

_____

RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:

F.9. RCRA Waste. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail, or dedicated pipe? ____Yes ___No (go to F.12.)

F.10. Waste Transport. Method by which RCRA waste is received (check all that apply):

_____Truck _____Rail _____Dedicated Pipe

F.11. Waste Description. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA Hazardous Waste Number	Amount	Units

CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:

F.12. Remediation Waste. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

____Yes (complete F.13 through F.15.) ____No

Provide a list of sites and the requested information (F.13 - F.15.) for each current and future site.

F.13. Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

_____

_____

_____

F.14. Pollutants. List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary).

_____

_____

F.15. Waste Treatment.

a. Is this waste treated (or will it be treated) prior to entering the treatment works?

____Yes ____No

If yes, describe the treatment (provide information about the removal efficiency):

_____

_____

b. Is the discharge (or will the discharge be) continuous or intermittent?

____Continuous ____Intermittent If intermittent, describe discharge schedule.

_____

END OF PART F.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

SUPPLEMENTAL APPLICATION INFORMATION

PART G. COMBINED SEWER SYSTEMS

If the treatment works has a combined sewer system, complete Part G.

G.1. System Map. Provide a map indicating the following: (may be included with Basic Application Information)

a. All CSO discharge points.

b. Sensitive use areas potentially affected by CSOs (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems, and outstanding natural resource waters).

c. Waters that support threatened and endangered species potentially affected by CSOs.

G.2. System Diagram. Provide a diagram, either in the map provided in G.1. or on a separate drawing, of the combined sewer collection system that includes the following information:

a. Locations of major sewer trunk lines, both combined and separate sanitary.

b. Locations of points where separate sanitary sewers feed into the combined sewer system.

c. Locations of in-line and off-line storage structures.

d. Locations of flow-regulating devices.

e. Locations of pump stations.

CSO OUTFALLS:

Complete questions G.3 through G.6 once for each CSO discharge point.

G.3. Description of Outfall.

a. Outfall number _____

b. Location

_____
(City or town, if applicable) (Zip Code)

_____
(County) (State)

_____
(Latitude) (Longitude)

c. Distance from shore (if applicable) _____ ft.

d. Depth below surface (if applicable) _____ ft.

e. Which of the following were monitored during the last year for this CSO?

____Rainfall ____CSO pollutant concentrations ____CSO frequency

____CSO flow volume ____Receiving water quality

f. How many storm events were monitored during the last year? _____

G.4. CSO Events.

a. Give the number of CSO events in the last year.

_____ events (___ actual or ___ approx.)

b. Give the average duration per CSO event.

_____ hours (____ actual or ____ approx.)

c. Give the average volume per CSO event.

_____ million gallons (_____ actual or _____ approx.)

d. Give the minimum rainfall that caused a CSO event in the last year.

_____ inches of rainfall

G.5. Description of Receiving Waters.

a. Name of receiving water: _____

b. Name of watershed/river/stream system: _____

United States Soil Conservation Service 14-digit watershed code (if known): _____

c. Name of State Management/River Basin: _____

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): _____

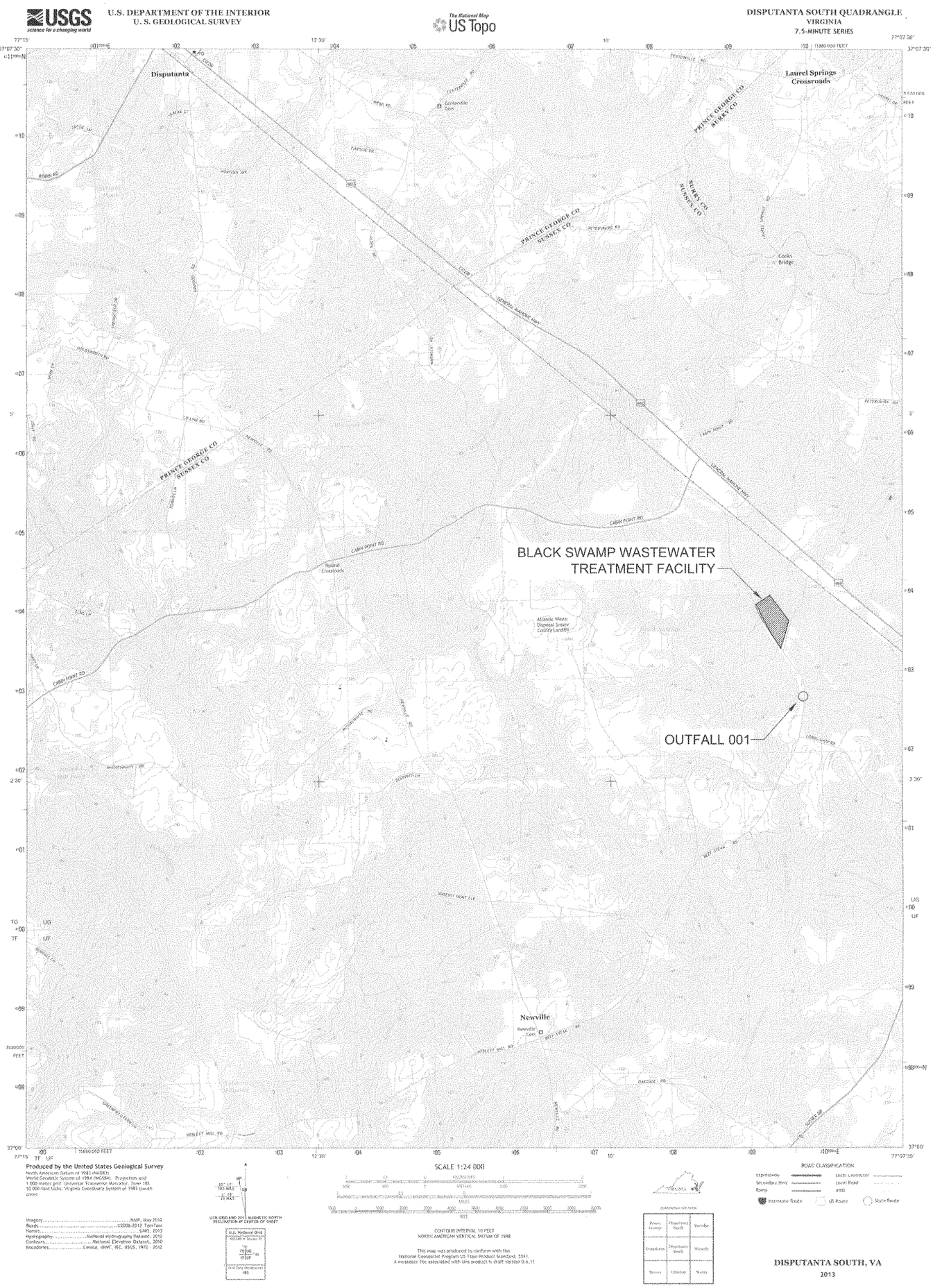
G.6. CSO Operations.

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

_____

_____

END OF PART G.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

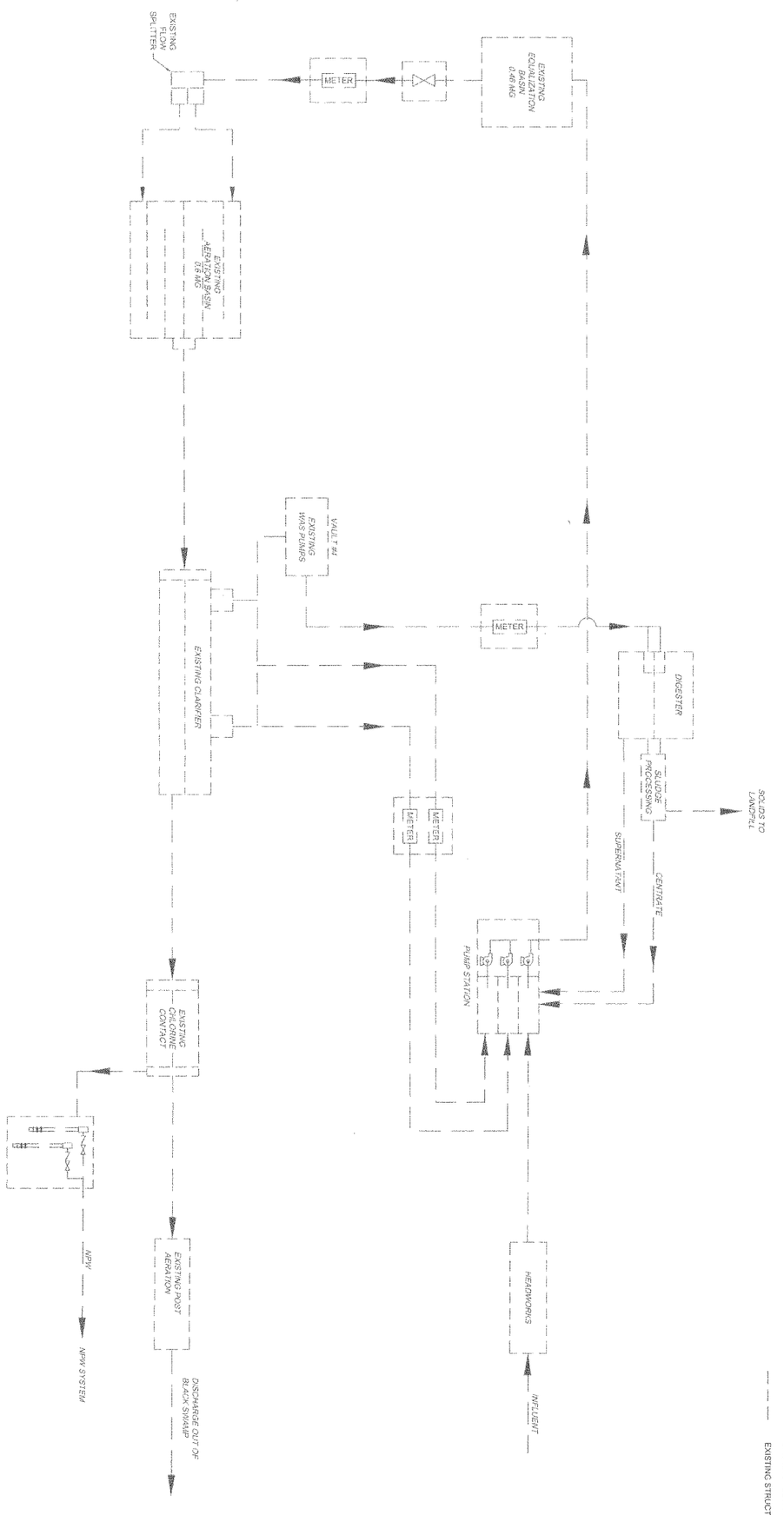


BLACK SWAMP WASTEWATER TREATMENT FACILITY LOCATION

AS REQUIRED PER ITEM XI OF EPA FORM 3510-1

SUSSEX SERVICE AUTHORITY

FEBRUARY 26, 2016



TIMMONS GROUP

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THIS DRAWING PREPARED AT THE
Corporate Headquarters
1001 Boulders Parkway | Richmond, VA 23225
TEL 804.280.8500 FAX 804.560.1016 www.timmons.com

35% REVIEW NOT FOR CONSTRUCTION

BLACK SWAMP WWTP EXPANSION

WAVERLY DISTRICT - SUSSEX COUNTY - VIRGINIA

EXISTING PROCESS FLOW DIAGRAM

SHEET NO.	PFD-1
JOB NO.	37334
SCALE	AS SHOWN
CHECKED BY	D. SAUNDERS
DESIGNED BY	N. ROGERS
DRAWN BY	J. MARSHALL
DATE	

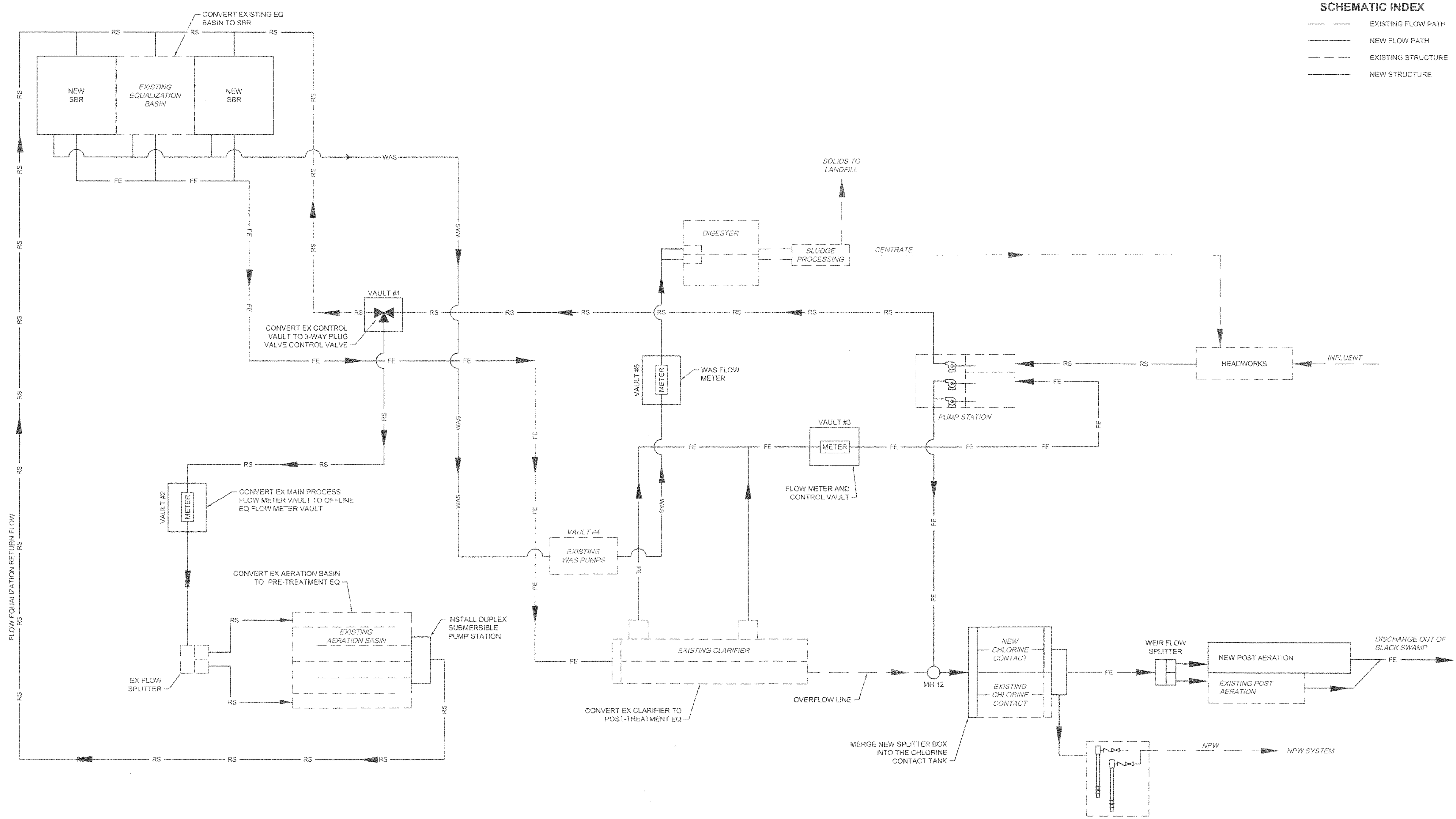
DATE	REVISION DESCRIPTION
---	---

DESIGN CRITERIA

ADF	=	1.6	MGD
PDF	=	2.4	MGD
PHF	=	4.8	MGD
CBOD	=	250	MG/L
TSS	=	260	MG/L
TKN	=	45	MG/L

SCHEMATIC INDEX

- EXISTING FLOW PATH
- NEW FLOW PATH
- EXISTING STRUCTURE
- NEW STRUCTURE



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1001 Boulders Parkway | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE

DATE	
DRAWN BY	J.MARSHALL
DESIGNED BY	N. ROGERS
CHECKED BY	D. SAUNDERS
SCALE	AS SHOWN

TIMMONS GROUP

BLACK SWAMP WWTP EXPANSION

WAVERLY DISTRICT - SUSSEX COUNTY - VIRGINIA

PROPOSED PROCESS FLOW DIAGRAM

JOB NO. 37334

SHEET NO. PFD-2

L:\201\37334 – Black Swamp\DWG\37334G–DGPNID.dwg | Plotted on 3/8/2016 10:38 AM | by Justin Marshall

Appendix C

Expanded Effluent Testing Data

Lab Sheets

REPORT OF ANALYSIS

CLIENT: Sussex Service Authority
ATTN: Bob Magette
ADDRESS: 4385 Beef Steak Road
Waverly, Va 23890
PHONE: (804) 691-4582
FAX: rmagette@ssa-va.org

Special Notes:
Black Swamp

SAMPLE COLLECTED BY: CLIENT
GRAB COLLECTION:
Date: 2/1/2016 Time: 1028
COMPOSITE COLLECTION:
Start Date: Time:
End Date: Time:

PICK UP BY: REED - DBB
SAMPLE RECEIPT:
Date: 2/1/2016 Time: 1420
NUMBER OF CONTAINERS: 9
SAMPLE CONDITION: ☑ Good ☐ Other (See C-O-C)
REPORT NO: 16-01434 15:06

SAMPLE ID: Outfall 001
SAMPLE NO: 16-01434

Parameter	Method Number	JRA QL	Result	Unit	Analyst	Date	Time
Dioxin(2,3,7,8 TCDD)	1613	10	<10	pg/L	PAC	02/19/16	1408
Total Antimony	200.7	0.005	0.009	mg/L	PEJ	02/09/16	1656
Total Arsenic	200.7	0.005	< 0.005	mg/L	PEJ	02/09/16	1656
Total Beryllium	200.7	0.0005	< 0.0005	mg/L	PEJ	02/09/16	1656
Total Cadmium	200.7	0.0005	< 0.0005	mg/L	PEJ	02/09/16	1656
Total Chromium	200.7	0.001	< 0.001	mg/L	PEJ	02/09/16	1656
Total Copper	200.7	0.002	0.006	mg/L	PEJ	02/09/16	1656
Total Lead	200.7	0.005	< 0.005	mg/L	PEJ	02/09/16	1656
Total Mercury	245.1	0.0002	< 0.0002	mg/L	TLG	02/03/16	1114
Total Nickel	200.7	0.005	< 0.005	mg/L	PEJ	02/09/16	1656
Total Selenium	200.7	0.005	< 0.005	mg/L	PEJ	02/09/16	1656
Total Silver	200.7	0.001	< 0.001	mg/L	PEJ	02/09/16	1656
Total Thallium	200.7	0.005	< 0.005	mg/L	PEJ	02/10/16	1246
Total Zinc	200.7	0.005	0.070	mg/L	PEJ	02/09/16	1656
Cyanide	335.4	0.005	< 0.005	mg/L	ARC	02/05/16	0957
Semi-Volatiles							
Benzo[a]Pyrene	625	5	< 5	ug/L	CLH	02/09/16	0048
Phenol	625	5	< 5	ug/L	CLH	02/09/16	0048
2,4-Dinitrophenol	625	20	< 20	ug/L	CLH	02/09/16	0048
2,4,6-Trichlorophenol	625	5	< 5	ug/L	CLH	02/09/16	0048
4-Chloro 3-Methylphenol	625	5	< 5	ug/L	CLH	02/09/16	0048
2,4-Dichlorophenol	625	5	< 5	ug/L	CLH	02/09/16	0048
2,4-Dimethylphenol	625	5	< 5	ug/L	CLH	02/09/16	0048
2-Nitrophenol	625	5	< 5	ug/L	CLH	02/09/16	0048
4,6 Dinitro-o-cresol	625	5	< 5	ug/L	CLH	02/09/16	0048
4-Nitrophenol	625	5	< 5	ug/L	CLH	02/09/16	0048
2-Chlorophenol	625	5	< 5	ug/L	CLH	02/09/16	0048
Benzo[g,h,i]Perylene	625	5	< 5	ug/L	CLH	02/09/16	0048
Indeno[1,2,3-c,d]Pyrene	625	5	< 5	ug/L	CLH	02/09/16	0048
Heptachlor	625	5	< 5	ug/L	CLH	02/09/16	0048

REPORT OF ANALYSIS

SAMPLE ID: Outfall 001
SAMPLE NO: 16-01434

Parameter	Method Number	JRA QL	Result	Unit	Analyst	Date	Time
Semi-Volatiles							
Benzo[k]Fluoranthene	625	5	< 5	ug/L	CLH	02/09/16	0048
Benzo[b]Fluoranthene	625	5	< 5	ug/L	CLH	02/09/16	0048
Di-n-Octyl phthalate	625	5	< 5	ug/L	CLH	02/09/16	0048
Bis(2-ethylhexyl) phthalate	625	5	< 5	ug/L	CLH	02/09/16	0048
3,3-Dichlorobenzidine	625	5	< 5	ug/L	CLH	02/09/16	0048
Chrysene	625	5	< 5	ug/L	CLH	02/09/16	0048
Benzo[a]Anthracene	625	5	< 5	ug/L	CLH	02/09/16	0048
Butyl benzyl phthalate	625	5	< 5	ug/L	CLH	02/09/16	0048
Benzidine	625	5	< 5	ug/L	CLH	02/09/16	0048
Dibenz[a,h]Anthracene	625	5	< 5	ug/L	CLH	02/09/16	0048
p,p-DDT	625	5	< 5	ug/L	CLH	02/09/16	0048
Hexachlorocyclopentadiene	625	5	< 5 CC	ug/L	CLH	02/09/16	0048
Pyrene	625	5	< 5	ug/L	CLH	02/09/16	0048
PCB 1260	625	5	< 5	ug/L	CLH	02/09/16	0048
PCB 1254	625	5	< 5	ug/L	CLH	02/09/16	0048
PCB 1248	625	5	< 5	ug/L	CLH	02/09/16	0048
PCB 1232	625	5	< 5	ug/L	CLH	02/09/16	0048
PCB 1221	625	5	< 5	ug/L	CLH	02/09/16	0048
PCB 1016/1242	625	5	< 5	ug/L	CLH	02/09/16	0048
Toxaphene	625	20	< 20	ug/L	CLH	02/09/16	0048
Chlordane	625	5	< 5	ug/L	CLH	02/09/16	0048
beta-BHC	625	5	< 5	ug/L	CLH	02/09/16	0048
Endrin aldehyde	625	5	< 5	ug/L	CLH	02/09/16	0048
Pentachlorophenol	625	10	< 10	ug/L	CLH	02/09/16	0048
beta Endosulfan	625	5	< 5	ug/L	CLH	02/09/16	0048
p,p-DDD	625	5	< 5	ug/L	CLH	02/09/16	0048
Endrin	625	5	< 5	ug/L	CLH	02/09/16	0048
Dieldrin	625	5	< 5	ug/L	CLH	02/09/16	0048
p,p-DDE	625	5	< 5	ug/L	CLH	02/09/16	0048
alpha Endosulfan	625	5	< 5	ug/L	CLH	02/09/16	0048
Heptachlor epoxide	625	5	< 5	ug/L	CLH	02/09/16	0048
Aldrin	625	5	< 5	ug/L	CLH	02/09/16	0048
delta-BHC	625	5	< 5	ug/L	CLH	02/09/16	0048
gamma-BHC	625	5	< 5	ug/L	CLH	02/09/16	0048
alpha-BHC	625	5	< 5	ug/L	CLH	02/09/16	0048
Endosulfan sulfate	625	5	< 5	ug/L	CLH	02/09/16	0048
N-Nitrosodimethylamine	625	5	< 5	ug/L	CLH	02/09/16	0048
Hexachlorobenzene	625	5	< 5	ug/L	CLH	02/09/16	0048
Fluoranthene	625	5	< 5	ug/L	CLH	02/09/16	0048
Hexachloroethane	625	5	< 5	ug/L	CLH	02/09/16	0048
1,2,4-Trichlorobenzene	625	5	< 5	ug/L	CLH	02/09/16	0048
2-Chloronaphthalene	625	5	< 5	ug/L	CLH	02/09/16	0048
Bis(2-chloroethyl) ether	625	5	< 5	ug/L	CLH	02/09/16	0048
Bis(2-chloroisopropyl) ether	625	5	< 5	ug/L	CLH	02/09/16	0048

REPORT OF ANALYSIS

SAMPLE ID: Outfall 001
SAMPLE NO: 16-01434

Parameter	Method Number	JRA QL	Result	Unit	Analyst	Date	Time
Semi-Volatiles							
N-Nitroso-di-n-propylamine	625	5	< 5	ug/L	CLH	02/09/16	0048
Nitrobenzene	625	5	< 5	ug/L	CLH	02/09/16	0048
Isophorone	625	5	< 5	ug/L	CLH	02/09/16	0048
Bis(2-chloroethoxy)methane	625	5	< 5	ug/L	CLH	02/09/16	0048
Naphthalene	625	5	< 5	ug/L	CLH	02/09/16	0048
Acenaphthylene	625	5	< 5	ug/L	CLH	02/09/16	0048
4-Bromophenyl phenyl ether	625	5	< 5	ug/L	CLH	02/09/16	0048
di-n-Butyl phthalate	625	5	< 5	ug/L	CLH	02/09/16	0048
Hexachlorobutadiene	625	5	< 5	ug/L	CLH	02/09/16	0048
Dimethyl phthalate	625	5	< 5	ug/L	CLH	02/09/16	0048
Phenanthrene	625	5	< 5	ug/L	CLH	02/09/16	0048
Anthracene	625	5	< 5	ug/L	CLH	02/09/16	0048
N-nitroso-di-phenylamine	625	5	< 5	ug/L	CLH	02/09/16	0048
1,2,-Diphenylhydrazine	625	5	< 5	ug/L	CLH	02/09/16	0048
Diethyl phthalate	625	5	< 5	ug/L	CLH	02/09/16	0048
4-Chlorophenyl phenyl ether	625	5	< 5	ug/L	CLH	02/09/16	0048
Fluorene	625	5	< 5	ug/L	CLH	02/09/16	0048
2,4-Dinitrotoluene	625	5	< 5	ug/L	CLH	02/09/16	0048
Acenaphthene	625	5	< 5	ug/L	CLH	02/09/16	0048
2,6-Dinitrotoluene	625	5	< 5	ug/L	CLH	02/09/16	0048
Volatiles							
1,2-Dichloropropane	624	5	< 5	ug/L	SDT	02/03/16	1357
cis-1,2-Dichloroethene	624	5	< 5	ug/L	SDT	02/03/16	1357
Bromodichloromethane	624	5	< 5	ug/L	SDT	02/03/16	1357
Carbon Tetrachloride	624	5	< 5	ug/L	SDT	02/03/16	1357
1,1,1-Trichloroethane	624	5	< 5	ug/L	SDT	02/03/16	1357
1,2-Dichloroethane	624	5	< 5	ug/L	SDT	02/03/16	1357
Chloroform	624	5	19	ug/L	SDT	02/03/16	1357
1,1,2,2-Tetrachloroethane	624	5	< 5	ug/L	SDT	02/03/16	1357
1,1-Dichloroethane	624	5	< 5	ug/L	SDT	02/03/16	1357
1,1-Dichloroethene	624	5	< 5	ug/L	SDT	02/03/16	1357
Trichlorofluoromethane	624	5	< 5	ug/L	SDT	02/03/16	1357
Methylene Chloride/Dichloromethane	624	5	< 5	ug/L	SDT	02/03/16	1357
Vinyl Chloride	624	5	< 5	ug/L	SDT	02/03/16	1357
Bromomethane	624	5	< 5	ug/L	SDT	02/03/16	1357
Chloromethane (Methyl Chloride)	624	5	< 5	ug/L	SDT	02/03/16	1357
trans-1,3-Dichloropropene	624	5	< 5	ug/L	SDT	02/03/16	1357
1,2-Dichlorobenzene	624	5	< 5	ug/L	SDT	02/03/16	1357
Chloroethane	624	5	< 5	ug/L	SDT	02/03/16	1357
Toluene	624	5	< 5	ug/L	SDT	02/03/16	1357
trans-1,2-Dichloroethene	624	5	< 5	ug/L	SDT	02/03/16	1357
Dichlorodifluoromethane	624	5	< 5	ug/L	SDT	02/03/16	1357
1,4-Dichlorobenzene	624	5	< 5	ug/L	SDT	02/03/16	1357
1,3-Dichlorobenzene	624	5	< 5	ug/L	SDT	02/03/16	1357

REPORT OF ANALYSIS

SAMPLE ID: Outfall 001
SAMPLE NO: 16-01434

Parameter	Method Number	JRA QL	Result	Unit	Analyst	Date	Time
Volatiles							
1,3-Dichloropropene(cis & trans)	624	5	< 5	ug/L	SDT	02/03/16	1357
Acrolein	624	50	< 50	ug/L	SDT	02/03/16	1357
Acrylonitrile	624	50	< 50	ug/L	SDT	02/03/16	1357
Chlorobenzene/Monochlorobenzene	624	5	< 5	ug/L	SDT	02/03/16	1357
Trichloroethene	624	5	< 5	ug/L	SDT	02/03/16	1357
Tetrachloroethene	624	5	< 5	ug/L	SDT	02/03/16	1357
Bromoform	624	5	< 5	ug/L	SDT	02/03/16	1357
2-Chloroethyl vinyl ether	624	10	< 10	ug/L	SDT	02/03/16	1357
cis-1,3-Dichloropropene	624	5	< 5	ug/L	SDT	02/03/16	1357
Benzene	624	5	< 5	ug/L	SDT	02/03/16	1357
1,1,2-Trichloroethane	624	5	< 5	ug/L	SDT	02/03/16	1357
Dibromochloromethane	624	5	< 5	ug/L	SDT	02/03/16	1357
Ethylbenzene	624	5	< 5	ug/L	SDT	02/03/16	1357

NOTES:

JRA Quantification Level is the concentration of the lowest calibration standard above zero with a reliable signal.

The results on this report relate only to the sample(s) provided for analysis.

Results conform to NELAC standards, where applicable, unless otherwise indicated.

2,3,7,8, TCDD subcontracted to Pace Analytical.

CC - Calibration check standard above QC acceptance range,
alyte not detected in sample.

Authorized By: Elaine Claiborne

Elaine Claiborne, Laboratory Director

Date: 23-Feb-16

James R. Reed & Associates
770 Pilot House Drive, Newport News, VA 23606
(757) 873-4703 • Fax: (757) 873-1498

VELAP# 460013
EPA# VA00015

CHAIN OF CUSTODY

Company Name: Sussex Service Authority
Company Contact: Bob Majette Telephone: 804-834-8930
Results To: Bob Majette (804-691-4582) Fax: 804-834-8933
Address: 4385 Beef Steak Road, Waverly, VA 23890
email result to: rmajette@ssa-va.org
Project ID: **Black Swamp**
Bob Magette CELL: 804-691-4582

ANALYSES REQUESTED

Bottle ID	A1-3	B1-2	C1-2	D	E								
Preserv.	1	1	1	2	1,4								

JRA ID #15	Sample Type*	Sample Location	Composite Start Date	Composite Start Time	Composite End Date	Composite End Time	Grab Date	Grab Time	Total # of cont.	Volatiles*	Semivolatiles*	2,3,7,8 TCDD** (subcontract)	Metals***	Cyanide ****(Interference Check)								
01434	WW	Outfall 001					2/1	1028	9	X	X	X	X	X								
													pH < 2 HNO_3	pH > 12 NaOH								

*WW= Wastewater, GW = Groundwater, DW - Drinking Water, HW - Hazardous Waste, OTHERS

Sampled By:	Chris Jackson	Date/Time: 2/1/16 1028
Relinquished By:	Chris Jackson	Date/Time: 2/1/16 1215
Received By:	Deanna Barbour	Date/Time: 2-1-16 1215
Relinquished By:	Deanna Barbour	Date/Time: 2-1-16 1420
Received By:		Date/Time: 2-1-16 @ 1420
Relinquished By:		Date/Time:
Received By:		Date/Time:

Preservatives:

1 = <6°C	6 = $Na_2S_2O_3$ + HCl	10=Ascorbic Acid + HCl
2 = HNO_3	7 = NaOH + ZnOAc	11=HCl
3 = H_2SO_4	8 = H_2SO_4 + FAS	12=Zinc Acetate + NaOH
4 = NaOH	9 = NH_4Cl	
5 = $Na_2S_2O_3$		

****CN Interference Check: Positive Negative
Sulfide: ___ ✓
Oxidizing Agent: ___ ✓

Arrival Temp: 3.4 °C

✓ for Compliance ref. in Lab
___ Not for Compliance

*Priority Pollutants
**Subcontract to Pace.
***Metals - Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl, Zn

JAMES R. REED and ASSOCIATES (757) 873-4703; FAX (757) 873-1498
770 Pilot House Drive, Newport News, VA 23606

Appendix D

Sludge Management Plan

FACILITY NAME: Black Swamp WWTF VPDES PERMIT NUMBER: VA0088978

VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

SCREENING INFORMATION

This application is divided into sections. Sections A pertain to all applicants. The applicability of Sections B, C and D depend on your facility's sewage sludge use or disposal practices. The information provided on this page will help you determine which sections to fill out.

1. All applicants must complete Section A (General Information).

2. Will this facility generate sewage sludge? X Yes _No

   Will this facility derive a material from sewage sludge? _Yes X No

   If you answered Yes to either, complete Section B (Generation Of Sewage Sludge Or Preparation Of A Material Derived From Sewage Sludge).

3. Will this facility apply sewage sludge to the land? _Yes X No

   Will sewage sludge from this facility be applied to the land? _Yes X No

   If you answered No to both questions above, skip Section C.

   If you answered Yes to either, answer the following three questions:

   a. Will the sewage sludge from this facility meet the ceiling concentrations, pollutant concentrations, Class A pathogen reduction requirements and one of the vector attraction reduction requirements 1-8, as identified in the instructions?
   _Yes _No

   b. Will sewage sludge from this facility be placed in a bag or other container for sale or give-away for application to the land? _Yes _No

   c. Will sewage sludge from this facility be sent to another facility for treatment or blending? _Yes X No

   If you answered No to all three, complete Section C (Land Application Of Bulk Sewage Sludge).

   If you answered Yes to a, b or c, skip Section C.

4. Do you own or operate a surface disposal site? _Yes X No

   If Yes, complete Section D (Surface Disposal).

SECTION A. GENERAL INFORMATION

All applicants must complete this section.

1. Facility Information.
   a. Facility name: Black Swamp WWTF
   b. Contact person: Michael P. Kearns
      Title: Engineer
      Phone: (804) 834-8930
   c. Mailing address: 4385 Beef Steak Rd
      Street or P.O. Box:
      City or Town: Waverly State: Va Zip: 23890
   d. Facility location:
      Street or Route #: 4385 Beef Steak Rd
      County:
      City or Town: Waverly State: Va Zip: 23890
   e. Is this facility a Class I sludge management facility? __Yes X No
   f. Facility design flow rate: 0.60 / 0.99 / 1.6 mgd
   g. Total population served: 5,877
   h. Indicate the type of facility:
      X Publicly owned treatment works (POTW)
      __ Privately owned treatment works
      __ Federally owned treatment works
      __ Blending or treatment operation
      __ Surface disposal site
      __ Other (describe):

2. Applicant Information. If the applicant is different from the above, provide the following:
   a. Applicant name: Sussex Service Authority
   b. Mailing address: 4385 Beef Steak Rd
      Street or P.O. Box:
      City or Town: Waverly State: Va Zip: 23890
   c. Contact person: Frank H. Irving III
      Title: Executive Director
      Phone: (804) 834-8930
   d. Is the applicant the owner or operator (or both) of this facility?
      X owner X operator
   e. Should correspondence regarding this permit be directed to the facility or the applicant? (Check one)
      _____ facility X applicant

3. Permit Information.
   a. Facility's VPDES permit number (if applicable): VA0088978
   b. List on this form or an attachment, all other federal, state or local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices:
      Permit Number: Type of Permit:

4. Indian Country. Does any generation, treatment, storage, application to land or disposal of sewage sludge from this facility occur in Indian Country? __Yes X No If yes, describe:

5. Topographic Map. Provide a topographic map or maps (or other appropriate maps if a topographic map is unavailable) that shows the following information. Maps should include the area one mile beyond all property boundaries of the facility:
   a. Location of all sewage sludge management facilities, including locations where sewage sludge is generated, stored, treated, or disposed.
   b. Location of all wells, springs, and other surface water bodies listed in public records or otherwise known to the applicant within 1/4 mile of the property boundaries.

6. Line Drawing. Provide a line drawing and/or a narrative description that identifies all sewage sludge processes that will be employed during the term of the permit including all processes used for collecting, dewatering, storing, or treating sewage sludge, the destination(s) of all liquids and solids leaving each unit, and all methods used for pathogen reduction and vector attraction reduction. See Appendix B of the Application for topographic map and process flow diagrams

7. Contractor Information. Are any operational or maintenance aspects of this facility related to sewage sludge generation, treatment, use or disposal the responsibility of a contractor? __Yes X No
If yes, provide the following for each contractor (attach additional pages if necessary).
Name:
Mailing address:
Street or P.O. Box:
City or Town: _____ State: _____ Zip:
Phone: ( )
Contractor's Federal, State or Local Permit Number(s) applicable to this facility's sewage sludge:

If the contractor is responsible for the use and/or disposal of the sewage sludge, provide a description of the service to be provided to the applicant and the respective obligations of the applicant and the contractor(s).

8. Pollutant Concentrations. Using the table below or a separate attachment, provide sewage sludge monitoring data for the pollutants which limits in sewage sludge have been established in 9 VAC 25-31-10 et seq. for this facility's expected use or disposal practices. All data must be based on three or more samples taken at least one month apart and must be no more than four and one-half years old. Data shown in Table below obtained from SMP Approved 12/2/2015

POLLUTANT	CONCENTRATION (mg/kg dry weight)	SAMPLE DATE	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
Arsenic	BDL	1/10/06	SW-846METH311	0.10 mg/L
Cadmium	BDL	1/10/06	SW-846METH311	0.10 mg/L
Chromium	BDL	1/10/06	SW-846METH311	0.10 mg/L
Copper	N/A	N/A	N/A	N/A
Lead	BDL	1/10/06	SW-846METH311	0.10 mg/L
Mercury	BDL	1/10/06	SW-846METH311	0.10 mg/L
Molybdenum	N/A	N/A	N/A	N/A
Nickel	N/A	N/A	N/A	N/A
Selenium	BDL	1/10/06	SW-846METH311	0.10 mg/L
Zinc	N/A	N/A	N/A	N/A

9. Certification. Read and submit the following certification statement with this application. Refer to the instructions to determine who is an officer for purposes of this certification. Indicate which parts of the application you have completed and are submitting:

X Section A (General Information)
X Section B (Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge)
____Section C (Land Application of Bulk Sewage Sludge)
____Section D (Surface Disposal)

FACILITY NAME: Black Swamp WWTF VPDES PERMIT NUMBER: VA0088978

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and official title

Signature Date Signed 3/29/16

Telephone number

Upon request of the department, you must submit any other information necessary to assess sewage sludge use or disposal practices at your facility or identify appropriate permitting requirements.

FACILITY NAME: Black Swamp WWTF VPDES PERMIT NUMBER: VA0088978

SECTION B. GENERATION OF SEWAGE SLUDGE OR PREPARATION OF A MATERIAL DERIVED FROM SEWAGE SLUDGE

mplete this section if your facility generates sewage sludge or derives a material from sewage sludge

1. Amount Generated On Site.
   Total dry metric tons per 365-day period generated at your facility: 653 dry metric tons

2. Amount Received from Off Site. If your facility receives sewage sludge from another facility for treatment, use or disposal, provide the following information for each facility from which sewage sludge is received. If you receive sewage sludge from more than one facility, attach additional pages as necessary.
   a. Facility name:
   b. Contact Person:
      Title:
      Phone ( )
   c. Mailing address:
      Street or P.O. Box:
      City or Town:_____ State:_____ Zip:
   d. Facility Address:
      (not P.O. Box)
   e. Total dry metric tons per 365-day period received from this facility:_____ dry metric tons
   f. Describe, on this form or on another sheet of paper, any treatment processes known to occur at the off-site facility, including blending activities and treatment to reduce pathogens or vector attraction characteristics:

3. Treatment Provided at Your Facility.
   a. Which class of pathogen reduction is achieved for the sewage sludge at your facility?
      __Class A __Class B X Neither or unknown
   b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge: Not Applicable

   c. Which vector attraction reduction option is met for the sewage sludge at your facility?
      __ Option 1 (Minimum 38 percent reduction in volatile solids)
      __ Option 2 (Anaerobic process, with bench-scale demonstration)
      __ Option 3 (Aerobic process, with bench-scale demonstration)
      __ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
      __ Option 5 (Aerobic processes plus raised temperature)
      __ Option 6 (Raise pH to 12 and retain at 11.5)
      __ Option 7 (75 percent solids with no unstabilized solids)
      __ Option 8 (90 percent solids with unstabilized solids)
      X None or unknown
   d. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge: Not Applicable

   e. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities, including blending, not identified in a - d above: Not Applicable

4. Preparation of Sewage Sludge Meeting Ceiling and Pollutant Concentrations, Class A Pathogen Requirements and One of Vector Attraction Reduction Options 1-8 (EQ Sludge).
   (If sewage sludge from your facility does not meet all of these criteria, skip Question 4.)
   a. Total dry metric tons per 365-day period of sewage sludge subject to this section that is applied to the land: Not Applicable dry metric tons
   b. Is sewage sludge subject to this section placed in bags or other containers for sale or give-away?
      __Yes X No

5. Sale or Give-Away in a Bag or Other Container for Application to the Land.
   (Complete this question if you place sewage sludge in a bag or other container for sale or give-away prior to land application. Skip this question if sewage sludge is covered in Question 4.)
   a. Total dry metric tons per 365-day period of sewage sludge placed in a bag or other container at your facility

for sale or give-away for application to the land: Not Applicable dry metric tons

b. Attach, with this application, a copy of all labels or notices that accompany the sewage sludge being sold or given away in a bag or other container for application to the land.

Shipment Off Site for Treatment or Blending.

(Complete this question if sewage sludge from your facility is sent to another facility that provides treatment or blending. This question does not apply to sewage sludge sent directly to a land application or surface disposal site. Skip this question if the sewage sludge is covered in Questions 4 or 5. If you send sewage sludge to more than one facility, attach additional sheets as necessary.)

a. Receiving facility name: McGill Environmental Systems (McGill - Waverly)

b. Facility contact:
Title: Plant Manager
Phone: (804 834-8820

c. Mailing address: 5056 Beef Steak Road
Street or P.O. Box:
City or Town: Waverly State: Va Zip: 23890

d. Total dry metric tons per 365-day period of sewage sludge provided to receiving facility: 500 dry metric tons

e. List, on this form or an attachment, the receiving facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the receiving facility's sewage sludge use or disposal practices:

Permit Number:	Type of Permit:

f. Does the receiving facility provide additional treatment to reduce pathogens in sewage sludge from your facility? X Yes __No
Which class of pathogen reduction is achieved for the sewage sludge at the receiving facility?
X Class A __Class B __Neither or unknown
Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce pathogens in sewage sludge: Composting

g. Does the receiving facility provide additional treatment to reduce vector attraction characteristics of the sewage sludge? __Yes __No
Which vector attraction reduction option is met for the sewage sludge at the receiving facility?
__ Option 1 (Minimum 38 percent reduction in volatile solids)
__ Option 2 (Anaerobic process, with bench-scale demonstration)
__ Option 3 (Aerobic process, with bench-scale demonstration)
__ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
X Option 5 (Aerobic processes plus raised temperature)
__ Option 6 (Raise pH to 12 and retain at 11.5)
__ Option 7 (75 percent solids with no unstabilized solids)
__ Option 8 (90 percent solids with unstabilized solids)
__ None unknown
Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge: Composting

h. Does the receiving facility provide any additional treatment or blending not identified in f or g above?
__Yes X No
If yes, describe, on this form or another sheet of paper, the treatment processes not identified in f or g above:

i. If you answered yes to f., g or h above, attach a copy of any information you provide to the receiving facility to comply with the "notice and necessary information" requirement of 9 VAC 25-31-530.G. Forms Attached

j Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away for application to the land? __Yes X No
If yes, provide a copy of all labels or notices that accompany the product being sold or given away.

k. Will the sewage sludge be transported to the receiving facility in a truck-mounted watertight tank normally used for such purposes? X Yes ___ No. If no, provide description and specification on the vehicle used to transport the sewage sludge to the receiving facility.
Show the haul route(s) on a location map or briefly describe the haul route below and indicate the days of the
Trucks would exit BSWWTF turn left on Beef Steak, travel east to 5056 Beef Steak Rd, 7 am to 6 pm M-F

week and the times of the day sewage sludge will be transported.

7. Land Application of Bulk Sewage Sludge. Not Applicable to BSWWTF

(Complete Question 7.a if sewage sludge from your facility is applied to the land, unless the sewage sludge is covered in Questions 4, 5 or 6; complete Question 7.b, c & d only if you are responsible for land application of sewage sludge.)

a. Total dry metric tons per 365-day period of sewage sludge applied to all land application sites:_____dry metric tons

b. Do you identify all land application sites in Section C of this application? __Yes __No
If no, submit a copy of the Land Application Plan (LAP) with this application (LAP should be prepared in accordance with the instructions).

c. Are any land application sites located in States other than Virginia? __Yes __No
If yes, describe, on this form or on another sheet of paper, how you notify the permitting authority for the States where the land application sites are located. Provide a copy of the notification.

d. Attach a copy of any information you provide to the owner or lease holder of the land application sites to comply with the "notice and necessary" information requirement of 9 VAC 25-31-530 F and/or H (Examples may be obtained in Appendix IV).

8. Surface Disposal. Not Applicable to BSWWTF

(Complete Question 8 if sewage sludge from your facility is placed on a surface disposal site.)

a. Total dry metric tons per 365-day period of sewage sludge from your facility placed on all surface disposal sites: _____ dry metric tons

b. Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?
__Yes __No
If no, answer questions c - g for each surface disposal site that you do not own or operate. If you send sewage sludge to more than one surface disposal site, attach additional pages as necessary.

c. Site name or number:

d. Contact person:
Title:
Phone: ( )
Contact is: __Site Owner __Site operator

e. Mailing address.
Street or P.O. Box:
City or Town:_____ State:_____ Zip:

f. Total dry metric tons per 365-day period of sewage sludge from your facility placed on this surface disposal site: _____ dry metric tons

g. List, on this form or an attachment, the surface disposal site VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the sewage sludge use or disposal practices at the surface disposal site:

Permit Number:	Type of Permit:
_____	
_____	

9. Incineration. Not Applicable to BSWWTF

(Complete Question 9 if sewage sludge from your facility is fired in a sewage sludge incinerator.)

a. Total dry metric tons per 365-day period of sewage sludge from your facility fired in a sewage sludge incinerator: _____ dry metric tons

b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired?
__Yes __No
If no, answer questions c - g for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one sewage sludge incinerator, attach additional pages as necessary.

c. Incinerator name or number:

d. Contact person:
Title:
Phone: ( )
Contact is: __Incinerator Owner __Incinerator Operator

e. Mailing address.
Street or P.O. Box:

City or Town:_____ State:_____ Zip:

f. Total dry metric tons per 365-day period of sewage sludge from your facility fired in this sewage sludge incinerator: _____ dry metric tons

g. List on this form or an attachment the numbers of all other federal, state or local permits that regulate the firing of sewage sludge at this incinerator:

Permit Number:	Type of Permit:

10. Disposal in a Municipal Solid Waste Landfill.

(Complete Question 10 if sewage sludge from your facility is placed on a municipal solid waste landfill. Provide the following information for each municipal solid waste landfill on which sewage sludge from your facility is placed. If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as necessary.)

a. Landfill name: Atlantic Waste Disposal Inc.

b. Contact person: Jason Williams
Title: District Manager
Phone: (804) 834-8300
Contact is: __Landfill Owner X Landfill Operator

c. Mailing address. 3474 Atlantic Lane
Street or P.O. Box:
City or Town: Waverly State: Va Zip: 23890

d. Landfill location. 3474 Atlantic Lane
Street or Route #:
County:
City or Town: Waverly State: Va Zip: 23890

e. Total dry metric tons per 365-day period of sewage sludge placed in this municipal solid waste landfill:
153 dry metric tons

f. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the operation of this municipal solid waste landfill:

Permit Number:	Type of Permit:
	VDEQ Solid Waste
562	

g. Does sewage sludge meet applicable requirements in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq., concerning the quality of materials disposed in a municipal solid waste landfill?
X Yes __No

h. Does the municipal solid waste landfill comply with all applicable criteria set forth in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq.? X Yes __No

i. Will the vehicle bed or other container used to transport sewage sludge to the municipal solid waste landfill be watertight and covered? X Yes ___ No

Show the haul route(s) on a location map or briefly describe the route below and indicate the days of the week and time of the day sewage sludge will be transported. Exit Black Swamp, right on Beef Steak Rd, left on Cabin Pt Rd to Atlantic Lane, turn left into Landfill entrance. Transport 7 am to 6 pm M-F

Not Applicable to BSWWTF

FACILITY NAME: Black Swamp WWTF VPDES PERMIT NUMBER: VA0088978

SECTION C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete this section for sewage sludge that is land applied unless any of the following conditions apply:
The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements and one of the vector attraction reduction options 1-8 (fill out B.4 instead) (EQ Sludge); or
The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or
You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).
Complete Section C for every site on which the sewage sludge that you reported in B.7 is land applied.

1. Identification of Land Application Site.
   a. Site name or number:
   b. Site location (Complete i and ii)
      i. Street or Route#:
      County:
      City or Town: _____ State: _____ Zip:
      ii. Latitude:_____ Longitude:
      Method of latitude/longitude determination
      _____ USGS map _____ Filed survey _____ Other
   c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

2. Owner Information.
   a. Are you the owner of this land application site? __Yes __No
   b. If no, provide the following information about the owner:
      Name:
      Street or P.O. Box:
      City or Town: _____ State:_____ Zip:
      Phone: ( )

3. Applier Information:
   a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site? __Yes __No
   b. If no, provide the following information for the person who applies the sewage sludge:
      Name:
      Street or P.O. Box:
      City or Town:_____ State:_____ Zip:
      Phone: ( )
   c. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the person who applies sewage sludge to this land application site:
      Permit Number: Type of Permit:
      _____
      _____

4. Site Type. Identify the type of land application site from among the following:
   __Agricultural land __Reclamation site __Forest
   __Public contact site __Other. Describe

5. Vector Attraction Reduction.
   Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?
   ___Yes ___No If yes, answer a and b.
   a. Indicate which vector attraction reduction option is met:
      __ Option 9 (Injection below land surface)
      __ Option 10 (Incorporation into soil within 6 hours)
   b. Describe, on this form or on another sheet of paper, any treatment processes used at the land application site to reduce the vector attraction properties of sewage sludge:

Cumulative Loadings and Remaining Allotments.
(Complete Question 6 only if the sewage sludge applied to this site since July 20, 1993 is subject to the cumulative pollutant loading rates (CPLRs) - see instructions.)
a. Have you contacted DEQ or the permitting authority in the state where the sewage sludge subject to the

CPLRs will be applied to ascertain whether bulk sewage sludge subject to the CPLRs has been applied to this site since July 20, 1993? __Yes __No
If no, sewage sludge subject to the CPLRs may not be applied to this site.
If yes, provide the following information:
Permitting authority:
Contact person:
Phone:( )

b. Based upon this inquiry, has bulk sewage sludge subject to the CPLRs been applied to this site since July 20, 1993? __Yes __No If no, skip the rest of Question 6. If yes, answer questions c - e.

c. Site size, in hectares: _____ (one hectare = 2.471 acres)

d. Provide the following information for every facility other than yours that is sending or has sent sewage sludge subject to the CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.
Facility name:
Facility contact:
Title:
Phone: ( )
Mailing address.
Street or P.O. Box:
City or Town:_____ State:_____ Zip:

e. Provide the total loading and allotment remaining, in kg/hectare, for each of the following pollutants:

	Cumulative loading	Allotment remaining
Arsenic		
Cadmium		
Copper		
Lead		
Mercury		
Nickel		
Selenium		
Zinc		

Complete Questions 7-12 below only if you apply sewage sludge, or you are responsible for land application of sewage sludge. Information required by these questions may be prepared as attachments to this form. Skip the following questions if you contract land application to someone else (as indicated under Section A.7) who is responsible for the operation.

7. Sludge Characterization. Use the table below or a separate attachment, provide at least one analysis for each parameter.

PCBs (mg/kg)
pH (S. U.)
Percent Solids (%)
Ammonium Nitrogen (mg/kg)
Nitrate Nitrogen (mg/kg)
Total Kjeldahl Nitrogen (mg/kg)
Total Phosphorus (mg/kg)
Total Potassium (mg/kg)
Alkalinity as $CaCO_3$* (mg/kg)

* Lime treated sludge (10% or more lime by dry weight) should be analyzed for percent $CaCO_3$.

8. Storage Requirements.
Existing and proposed sludge storage facilities must provide an estimated annual sludge balance on a monthly basis incorporating such factors as storage capacity, sludge production and land application schedule. Include pertinent calculations justifying storage requirements.
Proposed sludge storage facilities must also provide the following information:

a. A sludge storage site layout on a 7.5 minute topographic quadrangle or other appropriate scaled map to show the following topographic features of the surrounding landscape to a distance of 0.25 mile. Clearly mark the property line.
   1) Water wells, abandoned or operating
   2) Surface waters
   3) Springs
   4) Public water supply(s)
   5) Sinkholes
   6) Underground and/or surface mines
   7) Mine pool (or other) surface water discharge points
   8) Mining spoil piles and mine dumps
   9) Quarry(s)
   10) Sand and gravel pits
   11) Gas and oil wells
   12) Diversion ditch(s)
   13) Agricultural drainage ditch(s)
   14) Occupied dwellings, including industrial and commercial establishments
   15) Landfills or dumps
   16) Other unlined impoundments
   17) Septic tanks and drainfields
   18) Injection wells
   19) Rock outcrops

b. A topographic map of sufficient detail to clearly show the following information:
   1) Maximum and minimum percent slopes
   2) Depressions on the site that may collect water
   3) Drainageways that may attribute to rainfall run-on to or runoff from this site
   4) Portions of the site (if any) which are located with the 100-year floodplain and how the storage facility will be protected from flooding

c. Data and specifications for the storage facility lining material.

d. Plan and cross-sectional views of the storage facility.

e. Depth from the bottom of the storage facility to the seasonal high water table and separation distance to the permanent water table.

9. Land Area Requirements. Provide calculations justifying the land area requirements for land application of sewage sludge taking into consideration average soil productivity group, crop(s) to be grown and most limiting factor(s) of the sewage sludge, specifically Plant Available Nitrogen (PAN), Calcium Carbonate Equivalence (CCE), and metal loadings (CPLR sewage sludge only), where applicable. Relate PAN, CCE, and metal loadings to demonstrate the most limiting factor for land application.

10. Landowner Agreement Forms. Provide a properly completed **Land Application Agreement – Biosolids** Form and necessary attachments (attached at end of VPDES Sewage Sludge Permit Application Form) for each landowner if sewage sludge is to be applied onto land not owned by the applicant.

11. Ground Water Monitoring.
Are any ground water monitoring data available for this land application site? __Yes __No
If yes, submit the ground water monitoring data with this permit application. Also submit a written description of the well locations, approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.

12. Land Application Site Information.
(Complete Items a-d for sites receiving infrequent application - land application of sewage sludge up to the agronomic rate at a frequency of once in a 3 year period; complete Items a-h for sites receiving frequent application - land application of sewage sludge in excess of 70% the agronomic rate at a frequency greater than once in a 3 year period)

a. Provide a general location map for each county which clearly indicates the location of all the land application sites.

b. For each land application site provide a site plan of sufficient detail to clearly show the concerned landscape features and associated buffer zones (See instructions). Provide a legend for each landscape feature and the net acreage for each field taking into account the proposed buffer zones.

c. In order to ensure that land application of bulk sewage sludge will not impact federally listed threatened or endangered species or federally designated critical habitat, the applicant must notify the field office of the U. S. Department of the Interior, Fish and Wildlife Service (FWS), by a letter, the proposed land application activities with the identification of the land application sites. The address and phone number of FWS are provided below.

U. S. Fish and Wildlife Service
Virginia Field Office
6669 Short Lane
Gloucester, VA 23061
TEL: (804)693-6694

Provide a copy of the notification letter with this application form.

d. Provide a soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.)
Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon for each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions shall include as a minimum the following information.

1) Soil symbol
2) Soil series, textural phase and slope range
3) Depth to seasonal high water table
4) Depth to bedrock
5) Estimated soil productivity group (for the proposed crop rotation)

Item e - h are required for sites receiving frequent application of sewage sludge

e. In order to verify the information provided in item d, characterize the soil at each land application site. Representative soil borings or test pits to a depth of five feet or to bedrock if shallower, are to be coordinated for the typifying pedon of each soil series (soil type). Soil descriptions shall include as a minimum the following information:

1). Soil symbol
2). Soil series, textural phase and slope range
3). Depth to seasonal high water table
4). Depth to bedrock
5). Estimated soil productivity group (for the proposed crop rotation)

f. Collect and analyze soil samples from each field, weighted to best represent each of the soil borings performed for Item e. Using the table below or a separate attachment, provide at least one analysis per sample for each of the following parameters.

Soil Organic Matter (%)
Soil pH (std. units)
Cation Exchange Capacity (meq/100g)
Total Nitrogen (ppm)
Organic Nitrogen (ppm)
Ammonia Nitrogen (ppm)
Nitrate Nitrogen (ppm)
Available Phosphorus (ppm)
Exchangeable Potassium (mg/100g)
Exchangeable Sodium (mg/100g)
Exchangeable Calcium (mg/100g)
Exchangeable Magnesium (mg/100g)
Arsenic (ppm)
Cadmium (ppm)
Copper (ppm)
Lead (ppm)
Mercury (ppm)
Molybdenum (ppm)
Nickel (ppm)
Selenium (ppm)
Zinc (ppm)
Manganese (ppm)
Particle Size Analysis or
USDA Textural Estimate (%)

g. Relate the crop nutrient needs to anticipated yields, soil productivity rating and the various fertilizer or nutrient sources from sludge and chemical fertilizers. Describe any specialized agronomic management practices which may be required as a result of high soil pH. If the sludge is expected to possess an unusually high CCE or other unusual properties, provide a description of any plant tissue testing, supplemental fertilization or intensive agronomic management practices which may be necessary.

h. Using a narrative format and referencing any related charts, describe the proposed cropping system. Show how the crop rotation and management will be coordinated with the design of the land application system. Include any supplemental fertilization program, soil testing and the coordination of tillage practices, planting and harvesting schedules and timing of land application.

SECTION D. SURFACE DISPOSAL

Complete this section only if you own or operate a surface disposal site. Provide the information for each active sewage sludge unit.

1. Information on Active Sewage Sludge Units.
   a. Unit name or number:
   b. Unit location
      i. Street or Route#:
      County:
      City or Town: _____ State: _____ Zip:
      ii. Latitude:_____ Longitude:
      Method of latitude/longitude determination
      _____ USGS map _____ Filed survey _____ Other
   c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.
   d. Total dry metric tons of sewage sludge placed on the active sewage sludge unit per 365-day period: _____dry metric tons.
   e. Total dry metric tons of sewage sludge placed on the active sewage sludge unit over the life of the unit: _____ dry metric tons.
   f. Does the active sewage sludge unit have a liner with a minimum hydraulic conductivity of 1×10^{-7}cm/sec? __Yes __No If yes, describe the liner or attach a description.

   g. Does the active sewage sludge unit have a leachate collection system? __Yes __No
   If yes, describe the leachate collection system or attach a description. Also, describe the method used for leachate disposal and provide the numbers of any federal, state or local permits for leachate disposal:

   h. If you answered no to either f or g, answer the following:
   Is the boundary of the active sewage sludge unit less than 150 meters from the property line of the surface disposal site? __Yes __No If yes, provide the actual distance in meters:
   i. Remaining capacity of active sewage sludge unit, in dry metric tons:_____ dry metric tons
   Anticipated closure date for active sewage sludge unit, if known:_____ (MM/DD/YYYY)
   Provide with this application a copy of any closure plan developed for this active sewage sludge unit.

2. Sewage Sludge from Other Facilities.
   Is sewage sludge sent to this active sewage sludge unit from any facilities other than yours? __Yes __No
   If yes, provide the following information for each such facility, attach additional sheets as necessary.
   a. Facility name:
   b. Facility contact:
   Title:
   Phone: ( )
   c. Mailing address.
   Street or P.O. Box:
   City or Town:_____ State:_____ Zip:
   d. List, on this form or an attachment, the facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the facility's sewage sludge management practices:
   Permit Number: Type of Permit:
   _____
   _____
   e. Which class of pathogen reduction is achieved before sewage sludge leaves the other facility?
   __Class A __Class B __Neither or unknown
   f. Describe, on this form or on another sheet of paper, any treatment processes used at the other facility to reduce pathogens in sewage sludge:

   g. Which vector attraction reduction option is achieved before sewage sludge leaves the other facility?
   __ Option 1 (Minimum 38 percent reduction in volatile solids)

__ Option 2 (Anaerobic process, with bench-scale demonstration)
__ Option 3 (Aerobic process, with bench-scale demonstration)
__ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
__ Option 5 (Aerobic processes plus raised temperature)
__ Option 6 (Raise pH to 12 and retain at 11.5)
__ Option 7 (75 percent solids with no unstabilized solids)
__ Option 8 (90 percent solids with unstabilized solids)
__ None or unknown

h. Describe, on this form or another sheet of paper, any treatment processes used at the other facility to reduce vector attraction properties of sewage sludge:

i. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities performed by the other facility that are not identified in e - h above:

3. Vector Attraction Reduction.

a. Which vector attraction reduction option, if any, is met when sewage sludge is placed on this active sewage sludge unit?
__ Option 9 (Injection below land surface)
__ Option 10 (Incorporation into soil within 6 hours)
__ Option 11 (Covering active sewage sludge unit daily)

b. Describe, on this form or another sheet of paper, any treatment processes used at the active sewage sludge unit to reduce vector attraction properties of sewage sludge:

4. Ground Water Monitoring.

a. Is ground water monitoring currently conducted at this active sewage sludge unit or are ground water monitoring data otherwise available for this active sewage sludge unit? ___Yes __No
If yes, provide a copy of available ground water monitoring data. Also provide a written description of the well locations, the approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.

b. Has a ground water monitoring program been prepared for this active sewage sludge unit?
__Yes __No If yes, submit a copy of the ground water monitoring program with this application.

c. Have you obtained a certification from a qualified ground water scientist that the aquifer below the active sewage sludge unit has not been contaminated? __Yes __No
If yes, submit a copy of the certification with this application.

5. Site-Specific Limits.

Are you seeking site-specific pollutant limits for the sewage sludge placed on the active sewage sludge unit?
__Yes __No If yes, submit information to support the request for site-specific pollutant limits with this application.

Not Applicable to Black Swamp WWTF

VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

LAND APPLICATION AGREEMENT - BIOSOLIDS

A. This land application agreement is made on _____ between _____ referred to here as "Landowner", and _____, referred to here as the "Permittee". This agreement remains in effect until it is terminated in writing by either party or, with respect to those parcels that are retained by the Landowner in the event of a sale of one or more parcels, until ownership of all parcels changes. If ownership of individual parcels identified in this agreement changes, those parcels for which ownership has changed will no longer be authorized to receive biosolids or industrial residuals under this agreement.

Landowner:

The Landowner is the owner of record of the real property located in _____, Virginia, which includes the agricultural, silvicultural or reclamation sites identified below in Table 1 and identified on the tax map(s) attached as Exhibit A.

Table 1.: Parcels authorized to receive biosolids

Tax Parcel ID	Tax Parcel ID	Tax Parcel ID	Tax Parcel ID

☐ Additional parcels containing Land Application Sites are identified on Supplement A (check if applicable)

Check one:
- ☐ The Landowner is the sole owner of the properties identified herein.
- ☐ The Landowner is one of multiple owners of the properties identified herein.

In the event that the Landowner sells or transfers all or part of the property to which biosolids have been applied within 38 months of the latest date of biosolids application, the Landowner shall:

1. Notify the purchaser or transferee of the applicable public access and crop management restrictions no later than the date of the property transfer; and
2. Notify the Permittee of the sale within two weeks following property transfer.

The Landowner has no other agreements for land application on the fields identified herein. The Landowner will notify the Permittee immediately if conditions change such that the fields are no longer available to the Permittee for application or any part of this agreement becomes invalid or the information herein contained becomes incorrect.

The Landowner hereby grants permission to the Permittee to land apply biosolids on the agricultural sites identified above and in Exhibit A. The Landowner also grants permission for DEQ staff to conduct inspections on the land identified above, before, during or after land application of biosolids for the purpose of determining compliance with regulatory requirements applicable to such application.

_____

Landowner – Printed Name, Title Signature Mailing Address

Permittee:

_____, the Permittee, agrees to apply biosolids on the Landowner's land in the manner authorized by the VPDES Permit Regulation and in amounts not to exceed the rates identified in the nutrient management plan prepared for each land application field by a person certified in accordance with §10.1-104.2 of the Code of Virginia.

The Permittee agrees to notify the Landowner or the Landowner's designee of the proposed schedule for land application and specifically prior to any particular application to the Landowner's land. Notice shall include the source of residuals to be applied.

☐ I reviewed the documents assigning signatory authority to the person signing for landowner above. I will make a copy of this document available to DEQ for review upon request. (Do not check this box if the landowner signs this agreement)

_____

Permittee – Authorized Representative Printed Name Signature Mailing Address

VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

LAND APPLICATION AGREEMENT - BIOSOLIDS

Permittee: _____ **County or City:** _____

Landowner: _____

Landowner Site Management Requirements:

I, the Landowner, I have received a DEQ Biosolids Fact Sheet that includes information regarding regulations governing the land application of biosolids, the components of biosolids and proper handling and land application of biosolids.

I have also been expressly advised by the Permittee that the site management requirements and site access restrictions identified below must be complied with after biosolids have been applied on my property in order to protect public health, and that I am responsible for the implementation of these practices.

I agree to implement the following site management practices at each site under my ownership following the land application of biosolids at the site:

1. Notification Signs: I will not remove any signs posted by the Permittee for the purpose of identifying my field as a biosolids land application site, unless requested by the Permittee, until at least 30 days after land application at that site is completed.
2. Public Access
   a. Public access to land with a high potential for public exposure shall be restricted for at least one year following any application of biosolids.
   b. Public access to land with a low potential for public exposure shall be restricted for at least 30 days following any application of biosolids. No biosolids amended soil shall be excavated or removed from the site during this same period of time unless adequate provisions are made to prevent public exposure to soil, dusts or aerosols;
   c. Turf grown on land where biosolids are applied shall not be harvested for one year after application of biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by DEQ.
3. Crop Restrictions:
   a. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after the application of biosolids.
   b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after the application of biosolids when the biosolids remain on the land surface for a time period of four (4) or more months prior to incorporation into the soil,
   c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months when the biosolids remain on the land surface for a time period of less than four (4) months prior to incorporation.
   d. Other food crops and fiber crops shall not be harvested for 30 days after the application of biosolids;
   e. Feed crops shall not be harvested for 30 days after the application of biosolids (60 days if fed to lactating dairy animals).
4. Livestock Access Restrictions:
   Following biosolids application to pasture or hayland sites:
   a. Meat producing livestock shall not be grazed for 30 days,
   b. Lactating dairy animals shall not be grazed for a minimum of 60 days.
   c. Other animals shall be restricted from grazing for 30 days;
5. Supplemental commercial fertilizer or manure applications will be coordinated with the biosolids and industrial residuals applications such that the total crop needs for nutrients are not exceeded as identified in the nutrient management plan developed by a person certified in accordance with §10.1-104.2 of the Code of Virginia;
6. Tobacco, because it has been shown to accumulate cadmium, should not be grown on the Landowner's land for three years following the application of biosolids or industrial residuals which bear cadmium equal to or exceeding 0.45 pounds/acre (0.5 kilograms/hectare).

_____

Landowner's Signature Date

VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

LAND APPLICATION AGREEMENT - BIOSOLIDS

Landowner Coordination Form

This form is used by the Permittee to identify properties (tax parcels) that are authorized to receive biosolids and each of the legal landowners of those tax parcels. A *Land Application Agreement – Biosolids* form, pages 1 and 2 with original signature must be attached for each legal landowner identified below prior to land application at the identified parcels.

Permittee: _____

County or City: _____

Please Print (Signatures not required on this page)

Tax Parcel ID(s)	Landowner(s)

VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

LAND APPLICATION AGREEMENT - BIOSOLIDS

Permittee: _____ City/County: _____

Landowner: _____

Supplement A: Additional Land Application Sites

Table 1 continued: Parcels authorized to receive biosolids.

Tax Parcel ID	Tax Parcel ID	Tax Parcel ID	Tax Parcel ID

_____

Landowner – Printed Name Signature Mailing Address

VIRGINIA POLLUTION ABATEMENT

PERMIT APPLICATION

FORM D

MUNICIPAL EFFLUENT AND BIOSOLIDS

PART D-IV BIOSOLIDS CHARACTERIZATION FORM

PART D-V NON-HAZARDOUS WASTE DECLARATION

Contact the Department of Environmental Quality's Regional office if instructions beyond those provided in the form are required.

Black Swamp WWTF

Department of Environmental Quality

VIRGINIA POLLUTION ABATEMENT APPLICATION

FORM D

MUNICIPAL EFFLUENT AND BIOSOLIDS

PART D-IV BIOSOLIDS CHARACTERIZATION FORM

1. Facility Name: McGill-Waverly

2. Source or Generator: Sussex Service Authority – Black Swamp WWTF

3. Type of Treatment: Aerobically digested sludge

4. Biosolids Treatment Classification: less than Class B

5. Describe the method of sludge treatment or stabilization for each biosolids source. Provide a flow diagram of each wastewater treatment plant's residual treatment train and yearly biosolids production. In addition, provide the design flow of each facility. Aerobically digested then processed through centrifuge.

6. For all biosolids, provide at least one analysis for each parameter. The laboratory analytical data must be representative of biosolids samples collected at the frequencies specified in the table below.

Parameter	Biosolids[1]	
Percent Solids	37.2	%
Volatile Solids		%
pH	6.99	S.U.
Alkalinity as $CaCO_3$[2]		mg/kg
Nitrogen, (Nitrate)		mg/kg
Nitrogen, (Ammonium)		mg/kg
Nitrogen, (Total Kjeldahl)		mg/kg
Phosphorus, (Total)		mg/kg
Potassium, (Total)		mg/kg
Lead	ND	mg/kg
Cadmium	ND	mg/kg
Copper		mg/kg
Nickel		mg/kg
Zinc		mg/kg
Arsenic	ND	mg/kg
Mercury	ND	mg/kg
Molybdenum		mg/kg
Polychlorinated biphenols	ND	mg/kg
Selenium		mg/kg

[1] Values reported on a dry weight basis unless indicated.
[2] Lime treated biosolids (10% or more lime by dry weight) should be analyzed for percent $CaCO_3$.

7. For Exceptional Quality Biosolids, provide at least one analysis for each parameter. The laboratory analytical data must be representative of biosolids samples collected at the frequencies specified in the table below.

Parameter	Biosolids[1]	
Aldrin/dieldrin (total)	_____	mg/kg
Benzo (a) pyrene	_____	mg/kg
Chlordane	_____	mg/kg
DDT/DDE/DDD (total)[2]	_____	mg/kg
Dimethyl nitrosamine	_____	mg/kg
Heptachlor	_____	mg/kg
Hexachlorobenzene	_____	mg/kg
Hexachlorobutadiene	_____	mg/kg
Lindane	_____	mg/kg
Toxaphene	_____	mg/kg
Trichloroethylene	_____	mg/kg

[1] Values reported on a dry weight basis unless indicated.
[2] Note: DDT = 2,2--Bis (chlorophenyl)--1,1,1—Trichloroethane; DDE = 1,1--Bis (chlorophenyl)--2,2—Dichloroethane; DDD = 1,1--Bis (chlorophenyl)--2,2--Dichloroethane

8. Provide at least one analysis of any other pollutants which you believe may be present in the biosolids. Upon review, additional analyses may be required by DEQ.

_____ _____

_____ _____

Biosolids Sampling Frequency

Amount of biosolids[1] (metric tons per 365-day period)	Frequency
Greater than zero but less than 290	Once per year
Equal to or greater than 290 but less than 1,500	Once per quarter (four times per year)
Equal to or greater than 1,500 but less than 15,000	Once per 60 days (six times per year)
Equal to or greater than 15,000	Per month (12 times per year)

[1] Either the amount of bulk biosolids applied to the land or the amount of biosolids received by a person who prepares biosolids that is sold or given away in a bag or other container for application to the land (dry weight basis).

VIRGINIA POLLUTION ABATEMENT APPLICATION

FORM D

MUNICIPAL EFFLUENT AND BIOSOLIDS

Black Swamp WWTF

PART D-V NON-HAZARDOUS WASTE DECLARATION

For waste to be land applied, the owner, as defined by 9 VAC 25-32, must sign the following statement.

I certify that the waste described in this application is non-hazardous and not regulated under the Resource Conservation and Recovery Act or the Virginia Hazardous Waste Management Regulation (9 VAC 20-60).

Michael P. Kearns Date: 10/22/15

(Signature of Owner)

Microbac Laboratories, Inc.
Richmond Division
2028 Dabney Road, Suite E-17 • Richmond, VA 23230
Phone: 804-353-1999
Fax: 804-353-0330
www.microbac.com

CERTIFICATE OF ANALYSIS

Sussex Service Authority Mike Kearns 4385 Beef Steak Road Waverly, VA 23890	Project: WWTP Sludge Recertification Analysis Project Number: WWTP Sludge Recertification Analysis Sampled By: C. Bohatec, M.P. Kearns	Report: 13D1303 Reported: 05/09/2013 11:53

Black Swamp

13D1303-03 (Sludge) Sampled: 04/16/2013 11:35; Type: Composite

Microbac Laboratories, Inc. - Ohio Valley

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
8270 TC								
2,4,5-Trichlorophenol	ND	50.0	ug/L	042313 1500	042413 1312	CAA	SW8270C	U
2,4,6-Trichlorophenol	ND	50.0	ug/L	042313 1500	042413 1312	CAA	SW8270C	U
Surrogate: 2-Fluorophenol		*36.8%*	*21-100*	*042313 1500*	*042413 1312*		*SW8270C*	
Surrogate: Phenol-d5		*24.3%*	*10-94*	*042313 1500*	*042413 1312*		*SW8270C*	
Surrogate: Nitrobenzene-d5		*60.6%*	*35-114*	*042313 1500*	*042413 1312*		*SW8270C*	
Surrogate: 2-Fluorobiphenyl		*59.1%*	*43-116*	*042313 1500*	*042413 1312*		*SW8270C*	
Surrogate: 2,4,6-Tribromophenol		*89.5%*	*10-123*	*042313 1500*	*042413 1312*		*SW8270C*	
Surrogate: p-Terphenyl-d14		*89.3%*	*33-141*	*042313 1500*	*042413 1312*		*SW8270C*	
PCB SOLID								
Aroclor-1016	ND	75.8	ug/kg	041913 1130	042213 2209	ECL	SW8082	U
Aroclor-1221	ND	75.8	ug/kg	041913 1130	042213 2209	ECL	SW8082	U
Aroclor-1232	ND	75.8	ug/kg	041913 1130	042213 2209	ECL	SW8082	U
Aroclor-1242	ND	75.8	ug/kg	041913 1130	042213 2209	ECL	SW8082	U
Aroclor-1248	ND	75.8	ug/kg	041913 1130	042213 2209	ECL	SW8082	U
Aroclor-1254	ND	75.8	ug/kg	041913 1130	042213 2209	ECL	SW8082	U
Aroclor-1260	ND	75.8	ug/kg	041913 1130	042213 2209	ECL	SW8082	U
Surrogate: 2,4,5,6-Tetrachloro-m-Xylene		*62.3%*	*29-133*	*041913 1130*	*042213 2209*		*SW8082*	
Surrogate: Decachlorobiphenyl		*57.8%*	*30-173*	*041913 1130*	*042213 2209*		*SW8082*	
Percent Solids								
Percent Solids	**37.2**	1.00	weight %		042013 0717	ERP	D2216	
Volatile Organics								
Benzene	ND	50.0	ug/L		042613 1336	TMB	SW8260B	U
Carbon tetrachloride	ND	50.0	ug/L		042613 1336	TMB	SW8260B	U

Microbac Laboratories, Inc. - Richmond Division

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Curtis B. Read, Project Manager

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Richmond Division
2028 Dabney Road, Suite E-17 • Richmond, VA 23230
Phone: 804-353-1999
Fax: 804-353-0330
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Black Swamp

13D1303-03 (Sludge) Sampled: 04/16/2013 11:35; Type: Composite

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc. - Ohio Valley								
Volatile Organics								
Chlorobenzene	ND	50.0	ug/L		042613 1336	TMB	SW8260B	U
Chloroform	ND	50.0	ug/L		042613 1336	TMB	SW8260B	U
1,2-Dichloroethane	ND	50.0	ug/L		042613 1336	TMB	SW8260B	U
1,1-Dichloroethene	ND	50.0	ug/L		042613 1336	TMB	SW8260B	U
Methyl Ethyl Ketone	ND	100	ug/L		042613 1336	TMB	SW8260B	U
Tetrachloroethene	ND	50.0	ug/L		042613 1336	TMB	SW8260B	U
chloroethene	ND	50.0	ug/L		042613 1336	TMB	SW8260B	U
Vinyl chloride	ND	100	ug/L		042613 1336	TMB	SW8260B	U
Surrogate: Dibromofluoromethane		*100%*	*86-118*		*042613 1336*		*SW8260B*	
Surrogate: 1,2-Dichloroethane-d4		*95.1%*	*80-120*		*042613 1336*		*SW8260B*	
Surrogate: Toluene-d8		*103%*	*88-110*		*042613 1336*		*SW8260B*	
Surrogate: 4-Bromofluorobenzene		*102%*	*86-115*		*042613 1336*		*SW8260B*	

Black Swamp WWTP

13D1303-04 (Sludge) Sampled: 04/16/2013 10:35; Type: Composite

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	**29.84**	0.05	% by Weight	042513 1300	042613 0000	LCR	SM (20) 2540G	
pH	**6.99**	0.100	pH Units	043013 1007	043013 1152	LCR	EPA 9045D	
General Chemistry								
Paint Filter Free Liquid	**NEGATIVE**		P/A	050213 2017	050213 2018	EDP	EPA 9095A	

Microbac Laboratories, Inc., Richmond Division

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Curtis B. Read, Project Manager

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CERTIFICATE OF ANALYSIS

Sussex Service Authority Mike Kearns 4385 Beef Steak Road Waverly, VA 23890	Project: WWTP Sludge Recertification Analysis Project Number: WWTP Sludge Recertification Analysis Sampled By: C. Bohatec, M.P. Kearns	Report: 13D1303 Reported: 05/09/2013 11:53

Black Swamp WWTP

13D1303-04 (Sludge) Sampled: 04/16/2013 10:35; Type: Composite

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
TCLP Extraction by EPA 1311								
TCLP Extraction	COMPLETED		N/A	042613 1448	042713 1134	EDP	EPA 1311	
TCLP Metals by 6000/7000 Series Methods								
Silver	ND	0.20	mg/L	042913 0908	042913 1309	APS	EPA 6010B	D
Arsenic	ND	0.20	mg/L	042913 0908	042913 1309	APS	EPA 6010B	D
Barium	**0.55**	0.50	mg/L	042913 0908	042913 1309	APS	EPA 6010B	D
Cadmium	ND	0.20	mg/L	042913 0908	042913 1309	APS	EPA 6010B	D
Chromium	ND	0.20	mg/L	042913 0908	042913 1309	APS	EPA 6010B	D
Mercury	ND	0.0020	mg/L	042913 1647	043013 1522	APS	EPA 7470A	D
Lead	ND	0.20	mg/L	042913 0908	042913 1309	APS	EPA 6010B	D
Selenium	ND	0.20	mg/L	042913 0908	042913 1309	APS	EPA 6010B	D
Analysis Performed on ASTM D 3987 Water Leachate								
Oil & Grease	ND	5.0	mg/L	050213 1145	050213 1153	BAB	ASTM 3987/EPA 1664A	

Spring Branch WWTP

13D1303-05 (Sludge) Sampled: 04/16/2013 11:55; Type: Composite

Analyte	Result	Reporting Limit	Units	Prepared	Analyzed	Analyst	Method	Notes
Microbac Laboratories, Inc., Baltimore Division								
Wet Chemistry								
% Solids	ND	0.05	% by Weight		042213 0000	LCR	SM (20) 2540G	
Microbac Laboratories, Inc. - Ohio Valley								
8270 TC								

Microbac Laboratories, Inc., Richmond Division

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Curtis B. Read, Project Manager

Appendix E

VPDES Permit Application Addendum

VPDES Permit Application Addendum

1. **Entity to whom the permit is to be issued**: Sussex Service Authority

Who will be legally responsible for the wastewater treatment facilities and compliance with the permit? This may or may not be the facility or property owner.

2. **Is this facility located within city or town boundaries?** Yes ☐ No X

3. **Provide the tax map parcel number for the land where the discharge is located.** 15-A-20

4. **For the facility to be covered by this permit, how many acres will be disturbed during the next five years due to new construction activities?** ~7

5. **What is the design average effluent flow of this facility?** 0.6 / 0.9 / 1.6 MGD
For industrial facilities, provide the max. 30-day average production level, include units:

In addition to the design flow or production level, should the permit be written with limits for any other discharge flow tiers or production levels? Yes X No ☐
If "Yes", please identify the other flow tiers (in MGD) or production levels:
0.6 / 0.9 / 1.6

Please consider the following questions for both the flow tiers and the production levels (if applicable): Do you plan to expand operations during the next five years? Is your facility's design flow considerably greater than your current flow?

6. **Nature of operations generating wastewater**:

99 % of flow from domestic connections/sources
Number of private residences to be served by the treatment works: ~3,300

1< % of flow from non-domestic connections/sources

7. **Mode of discharge**: X Continuous ☐ Intermittent ☐ Seasonal
Describe frequency and duration of intermittent or seasonal discharges:

8. **Identify the characteristics of the receiving stream at the point just above the facility's discharge point:**
- ___ Permanent stream, never dry
- ___ Intermittent stream, usually flowing, sometimes dry
- ___ Ephemeral stream, wet-weather flow, often dry
- X Effluent-dependent stream, usually or always dry without effluent flow
- ___ Lake or pond at or below the discharge point
- X Other: Un-Named Tributary to Black Swamp

9. **Approval Date(s)**:
O & M Manual 06/14/14 **Sludge/Solids Management Plan** 12/2/2015

Have there been any changes in your operations or procedures since the above approval dates? Yes ☐ No X

10. **Privately Owned Treatment Works**

If this application is for a privately owned treatment works serving, or designed to serve, 50 or more residences, you must include with your application notification from the State Corporation Commission that you are incorporated in the Commonwealth and verification from the SCC that you are in compliance with all regulations and relevant orders of the State Corporation Commission. Incorporated also includes Limited Liability Companies (LLCs), Limited Partnerships (LPs) and certificates of authority.

11. **Consent to receive electronic mail**

The Department of Environmental Quality (DEQ) may deliver permits and certifications (this includes permit issuances, reissuances, modifications, revocation and reissuances, terminations and denials) to recipients, including applicants or permittees, by electronically certified mail where the recipients notify DEQ of their consent to receive mail electronically (§ 10.1-1183). Check *only one* of the following to consent to or decline receipt of electronic mail from DEQ as follows:

X Applicant or permittee agrees to receive by electronic mail the permit that may be issued for the proposed pollutant management activity, and to certify receipt of such electronic mail when requested by the DEQ.

If yes, provide email: firving@ssa-va.org

☐ Applicant or permittee declines to receive by electronic mail the permit that may be issued for the proposed pollutant management activity.